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The Stability of Personality Disorders across the life span and the  
contributing Psychological Factors of Personality Disorders in Older Adults  
with Mental Health Problems.

Shonagh Reid

Submitted in part fulfilment of the degree of Doctorate in Clinical Psychology.

May 2015

## Declaration of own work

**Name:** Shonagh Reid

**Assessed work:** Thesis

**Title of work:** Schema Therapy for Older Adults: An investigation into the relationships between early maladaptive schemas, personality disorder traits and emotion regulation strategies.

*I confirm that all this work is my own except where indicated, and that I have:*

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- (For R2 & Thesis) Received ethical approval from the University of Edinburgh, School of Health ☐
- (For R2 & Thesis) Received ethical approval from an approved external body and registered this application and confirmation of approval with the University of Edinburgh's School of Health's ethical committee ☐

**Signature** ..... **Date** .....

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## **Abbreviations**

BPD	Borderline Personality Disorder
EMS	Early Maladaptive Schemas
ER	Emotion Regulation
PD	Personality Disorder
REQ-2	The Regulation of Emotions Questionnaire
SCATI-II	The Coolidge Axis Two Inventory – Short version
YSQ-S3	Young's Schema Questionnaire – Short version 3

## **Abstract**

Personality disorders (PD) are among the most complex aspects of human behaviour to understand and manage. Stability is thought to be one of the major distinguishing features between PD's and other forms of psychopathology, however, recent studies have challenged this notion. Borderline personality disorder (BPD) is the focus of this review and is characterised by interpersonal and emotion regulation difficulties. This thesis aimed to first examine the naturalistic course of BPD, through systematic review of the current literature. Following screening, 12 studies, that met all inclusion/exclusion criteria, were critically evaluated. The results, from studies rated as methodologically sound, suggested that the categorical diagnosis of BPD has poor stability over time, with only 3%-35% of participants retaining a diagnosis of BPD over time. However, the studies reviewed were limited by the population they examined: mainly working age adults with mental health problems. Therefore, studies need to be continued and replicated to increase our understanding of the life-span course of BPD.

PD's within older adults with mental health problems is a highly debated topic. Clinicians have highlighted the presence of PD symptoms within this group and the need for appropriate therapies. Schema therapy is one intervention that has shown to be effective in the treatment of PD symptoms within a working adult population. A recent Delphi-study led to the consensus that existing therapies for PD, such as schema therapy, that have shown to be effective in working aged adults are applicable to older adults. Therefore, the empirical project focused on exploring the theoretical underpinnings of schema therapy in older adults with mental health problems. 3 self-report questionnaires were administered to 62 participants (aged 65-85 years); Young's Schema Questionnaire – Short Form (YSQ-S3), Coolidge Axis-II Inventory (Short) (SCATI-II) and The Regulation of Emotions Questionnaire (REQ-2). Analysis highlighted that YSQ-S3 and REQ-2 scores significantly predicted 69% of the variance in SCATI-II scores. To the author's knowledge, this study is the first of its kind to find support for the relationships between early maladaptive schemas (EMS), PD symptoms and the use of dysfunctional emotion regulation (ER)



strategies, consistent with the schema therapy model, in older adults with mental health problems.

# SYSTEMATIC REVIEW JOURNAL ARTICLE

## The naturalistic course of Borderline Personality Disorder: A systematic review

Shonagh Reid<sup>1</sup>, Angus Lorimer<sup>1</sup>, Amber Keenan<sup>2</sup> and Paul Hutton<sup>3\*\*</sup>

<sup>1</sup> NHS Grampian, Older Adult Clinical Psychology Service, Block D, Royal Cornhill Hospital, Aberdeen, AB25 2ZH

<sup>2</sup> NHS Grampian, Department of Counselling and Clinical Psychology, Block A, Royal Cornhill Hospital, Aberdeen, AB25 2ZH

<sup>3</sup> School of Health in Social Science, University of Edinburgh, Edinburgh, EH1 2QL

Correspondence: [shonagh.reid@nhs.net](mailto:shonagh.reid@nhs.net) Telephone: 01224 557497

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\*\* This piece of work is written in its entirety by Shonagh Reid, Trainee Clinical Psychologist, supervised by Dr Paul Hutton, Academic Supervisor, and Dr Angus Lorimer, Clinical Supervisor. Supervisors' names are included on the article for publication purposes only, in acknowledgement of their intellectual contribution. Supervisors were not involved in the writing of this piece for the thesis.

## The Naturalistic Course of Borderline Personality Disorder: A systematic review\*\*

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\*\* This review is written in accordance with the Journal of Personality Disorders author guidelines (Appendix 1).

## **Abstract**

Aim: Personality Disorders (PD) are among the most complex aspects of human behaviour to understand and manage (Segal, Coolidge and Rosowsky, 2006). Between one half and two-thirds of psychiatric inpatients and outpatients meet the criteria for at least one PD (O'Connor and Dyce, 2001). Stability is thought to be one of the major distinguishing features of PDs. PDs cause significant problems for the individual including interpersonal and emotion regulation difficulties. Borderline personality disorder (BPD) is the focus of this review and is characterised by pervasive instability in moods, interpersonal relationships, self-image and behaviour. These patients pose difficulties for mental health services and BPD is perceived as among the most challenging forms of psychiatric illness (Segal et al, 2006). These perceptions are grounded in beliefs that PDs are stable over time with a poor prognosis. However, these perceptions have been challenged by major longitudinal studies into the stability of BPD. Therefore, this review aimed to investigate the naturalistic course of BPD over time by systematically reviewing the literature.

Methods: The electronic databases PsychInfo, Medline and Embase were searched in January 2015. Following screening twelve studies that met all inclusion/exclusion criteria were critically evaluated.

Results: The results of this review suggest that the categorical diagnosis of BPD has poor stability over time, with 3%-35% of participants retaining a BPD diagnosis over time.

Conclusions: It appears that BPD diagnosis stability decreases over time (Zanarini, 1993; Gunderson, 2000). The multi-wave longitudinal studies of PDs have laid the foundations for this work in a methodologically sound way, which needs to be continued and replicated to increase our understanding of the lifespan course of BPD.

## **The Naturalistic Course of BPD**

### **Personality Disorders**

Personality disorders (PD) have been diagnosed on a separate axis from other mental disorders ever since the creation of a multi-axial diagnostic format for the DMS-III in 1980. Stability is thought to be one of the major distinguishing features between PD and other forms of psychopathology with the Diagnostic and Statistical Manual of Mental Disorders (5<sup>th</sup> Edition, American Psychiatric Association, 2013) embracing this assumption in asserting that PDs are enduring patterns of behaviour that are inflexible and stable over time.

Borderline personality disorder (BPD) is the focus of this review and is estimated to affect up to 2% of adults (National Institute of Mental Health, 2013). This diagnosis is characterised by interpersonal and emotion regulation difficulties, which often disrupt the individual's family and work life causing significant difficulties for the individual. These difficulties also have a wider impact on society at an economic and social level, with patients often requiring extensive mental health services and resources, which can be costly. There are high rates of self-injury as well as suicide attempts and completions. The National Hospital Statistics (2009-2010) reported that 75% of all hospital admissions for those with PD were for BPD, with BPD being the most prevalent subtype in non-forensic mental health settings (Scambler, Daniel, Mahoney and Thomas, 2013). For these reasons BPD is probably the most frequently researched PD.

The diagnosis of BPD is based on symptoms that have been present since early adulthood and appear in multiple contexts (APA, 2000). Structured and semi-structured interviews assist clinicians in making this diagnosis. For example: "the Diagnostic Interview for Borderlines – Revised" is a validated and frequently used tool that is generally considered "gold standard" (Biskin and Paris, 2012). Symptoms of BPD (table 1) occur in four domains: affectivity, interpersonal functioning, impulse control and cognitive (APA, 2000).

Table 1: Borderline Personality Disorder Criteria (DSM-V)

Borderline Personality Disorder (BPD)
DSM-5 Criteria – Revised June 2011
<p>The essential features of a personality disorder are impairments in personality (self and interpersonal) functioning and the presence of pathological personality traits. To diagnose BPD, the following criteria must be met:</p> <p>A. Significant impairments in personality functioning manifest by:</p> <ol style="list-style-type: none"> <li>1. Impairments in self functioning (a or b) <ol style="list-style-type: none"> <li>a. Identity: Markedly impoverished, poorly developed or unstable self-image, often associated with excessive self-criticism; chronic feeling of emptiness; dissociative states under stress.</li> <li>b. Self Direction: Instability in goals, aspirations, values or career plans.</li> </ol> </li> </ol> <p style="text-align: center;">AND</p> <ol style="list-style-type: none"> <li>2. Impairments in interpersonal functioning (a or b): <ol style="list-style-type: none"> <li>a. Empathy: Compromised ability to recognise the feelings and needs of others associated with interpersonal hypersensitivity (i.e., prone to feeling slighted or insulted); perceptions of others selectively biased towards negative attributes or vulnerabilities.</li> <li>b. Intimacy: Intense, unstable and conflicted close relationships, marked by mistrust, neediness and anxious preoccupation with real or imagined abandonment; close relationships often viewed in extremes of idealisation and devaluation and alternating between over involvement and withdrawal.</li> </ol> </li> </ol> <p>B. Pathological personality traits in the following domains:</p> <ol style="list-style-type: none"> <li>1. Negative Affectivity, characterised by: <ol style="list-style-type: none"> <li>a. Emotional Liability: Unstable emotional experiences and frequent mood changes; emotions that are easily aroused, intense, and/or out of proportion to events and circumstances.</li> <li>b. Anxiousness: Intense feelings of nervousness, tenseness, or panic, often in reaction to interpersonal stresses; worry about negative effects of past unpleasant experiences and future negative possibilities; feeling fearful, apprehensive, or threatened by uncertainty; fears of falling apart or losing control.</li> <li>c. Separation Insecurity: Fears of rejection by – and/or separation from – significant others, associated with fears of excessive dependency and complete loss of autonomy.</li> <li>d. Depressivity: Frequent feelings of being down, miserable, and/or hopeless; difficulty recovering from such moods; pessimism about the future; pervasive shame; feeling of inferior self-worth; thoughts of suicide and suicidal behaviour.</li> </ol> </li> </ol>

2. Disinhibition, characterised by:

- a. Impulsivity: Acting on the spur of the moment in response to immediate stimuli; acting on a momentary basis without a plan or consideration of outcomes; difficulty establishing or following plans; a sense of urgency and self-harming behaviour under emotional distress.
- b. Risk Taking; Engagement in dangerous, risky and potentially self-damaging activities, unnecessarily and without regard to consequences; lack of concern for one's limitations and denial of the reality of personal danger.

3. Antagonism, characterised by:

- a. Hostility: Persistent or frequent angry feelings; anger or irritability in response to minor slights or insults.
- C. The impairments in personality functioning and the individuals personality trait expression are relatively stable across time and consistent across situations
- D. The impairments in personality functioning and the individual's personality trait expression are not better understood as normative for the individual's developmental stage or socio-cultural environment.
- E. The impairments in personality functioning and the individual's trait expression are not solely due to the direct physiological effects of a substance (e.g. a drug of abuse, medication) or a general medical condition (e.g. severe head trauma).

Early studies (Werble, 1970; Carpenter and Gunderson, 1977; Pope, Jonas and Hudson, 1983) supported the assumption that PDs were stable over time. However, these studies had methodological limitations which impacted on the reliability and validity of their results (Lenzenweger, 2006; Lenzenweger and Castro, 2005; Paris, Brown and Nowlis, 1987). The test re-test design employed in these studies was not able to show the longitudinal outcome of BPD. There has been continued research devoted to this area and several studies appear to raise questions about the presumption of stability, frequently indicating that some aspects of these disorders may show change over time (Bateman and Fonagy, 1999; Morey and Meyer, 2012; Zanarini et al, 2010).

Whether PDs are stable or not over time is an important area to consider in terms of service planning. Currently there is a lack of understanding, and limited research within the field of PDs in later life despite clinicians working within this area highlighting the reality of PD symptoms being present within this population (Marley and Fung, 2013; Mordekar and Spence, 2008; Abrams, 2006). Therefore, more research is required to investigate the longitudinal stability of PD's across the life span. Unlike Axis-I disorders, there is little sound empirical knowledge that exists regarding the long term course and outcomes of PDs (Skodol et al, 2005). Although PDs are among the most common disorders seen in mental health settings (Widiger and Rogers, 1989), and affect about 12% of the general population (Torgersen, 2005) valid estimates of their prognosis are limited. Furthermore, stability of personality pathology is a central defining feature of Axis-II disorders in the DSM (American Psychiatric Association, 2000), yet there is little empirical data to support this (Grilo, McGlashan, and Oldham, 1998).

Hypotheses with regard to the stability of PDs over time range from PDs remained the same over time; PDs attenuated or remitted over time (Gunderson, Stout, McGlashan, Shea, Morey, 2011); PDs symptoms fluctuating over time, with similar or novel presentation, (Engels, Duijsens, Haringsma and van Putten, 2003) and PDs remained the same but the presentation was different (Stepp and Pilkonis, 2008). Several researchers have suggested that PDs worsen or exacerbate in later life (Rose, Segal and Joseph, 1993; Rosowsky and Gurian, 1991, 1992). Furthermore, it has been hypothesised that many patients with PDs die before they get to later life due to PD related reckless or impulsive behaviour (Scambler, Daniel, Mahoney and Thomas, 2013). Despite all of these hypotheses few researchers today would assert that the personality is either entirely changing or entirely stable.

### **Factors that Impact on Stability**

It is important to think about factors which may impact on the stability of the BPD diagnosis, for example, gender, severity of BPD and co-morbidity of axis I and II diagnoses. Current evidence indicates that there are notable gender differences in



BPD with regard to personality traits, Axis I and II co-morbidity and treatment utilisation (Sansone and Sansone, 2011). The genders tend to exhibit slightly different behaviours and presentations, which could easily culminate in different clinical dispositions and result in sampling bias, with females being more likely to access mental health services (Goodman, Patill and Steffel, 2010). Therefore due to this bias being present within the clinical population it will impact on the stability in that it will bias the results of the stability outcome. Studies have found a mean of 4.1 lifetime axis-I co-morbidity and 1.9 lifetime axis-II co-morbidities for patients with BPD (Biskin and Paris, 2013). The most common co-morbidities in BPD are mood disorders, anxiety disorders, post-traumatic stress disorder, substance abuse and eating disorders (Biskin and Paris, 2013). Substance misuse has been found to be most closely associated with the failure to achieve remission from BPD (Zanarini et al, 2004). Therefore the comorbidities associated with BPD appear to impact on whether an individual continues to retain a diagnosis of BPD or the course of an individual's BPD diagnosis.

The impact of the severity of BPD needs to be considered when examining the stability of BPD overtime. Gunderson, Daverson and Grilo (2006) found that severe baseline psychopathology along with childhood trauma in BPD predicted poorer outcome over 2 years. If individuals have poorer outcomes it is more likely that they will retain the diagnosis of BPD hence impacting on stability.

Another factor is how the construct of BPD is defined, for example whether BPD is measured categorically or dimensionally. A categorical approach is often adopted in clinical settings because the presence or absence of a particular condition informs treatment decisions. However, the utility of categorical diagnoses is not limited to clinical settings, epidemiologists find them useful to be able to track the longitudinal course of particular diagnoses. Equally intervention researchers may find it useful to determine categorical treatment responses (Stein, 2012). Categorical diagnoses provide a useful way to communicate the main features of a disorder. Nevertheless, there are problems with the categorical system. For example, two individuals with BPD may have quite different symptom profiles and symptom severity. They may also have been different factors contributing to the pathogenesis of symptoms.

Furthermore, a diagnosis of BPD requires a person to meet 5 out of 9 possible criteria. This means that there are more than 150 possible combinations of 5 criteria than can qualify a person for a diagnosis of BPD (Hoermann, Zupanick and Domback, 2014). Moreover, this also means that any two people with BPD need only have a single symptom in common (Hoermann et al, 2014). This high variation amongst people with the same diagnosis makes the diagnosis less meaningful and may potentially also impact on the stability of that diagnosis, bringing into the question whether some of the criteria are more important or have more impact on an individual's ability to function in everyday life. Categorical diagnoses have an arbitrary cut-off score which may not take into account the impact of the symptoms on an individual's life. As mentioned above the categorical system assumes that all diagnostic symptoms carry the same weight and are considered equally important, however this may not be the case. For example, two of the nine criteria for BPD are "suicidal and self-harming behaviours" and "chronic feelings of emptiness". Many practicing clinicians would consider evidence of self-harm behaviour to be a vastly more significant indicators of BPD than reported feelings of emptiness (Hoermann et al, 2014). Finally the categorical approach also makes it difficult to categorise co-morbidities, with diagnoses of co-morbid disorders suggesting that each involves a different etiological mechanism which may not be the case (Stein, 2012).

The dimensional approach allows for greater accuracy and precision, however, with this comes a loss of diagnostic simplicity (Stein, 2012). In the dimensional model personality disorder would represent the extreme along a continuum of otherwise, normal, healthy personality dimensions. However with this comes difficulties defining where "normal" personality stops along that continuum. This leads to difficulties in treatment planning and at what point intervention is offered. It may also bring challenges in the research setting when often treatments are designed for the inclusion of specific categorical diagnoses. Although the dimensional approach can increase reliability, such an approach may be less useful for clinical practice and application (APA, 1994). The dimensional approach does however help to define co-morbidity better, although, it may be difficult to articulate complex patterns of overt symptoms.

Conversely, Kraemer, Noda and O'Hara (2004) argue that all diagnoses can be done using a categorical or dimensional approach, highlighting that any specific categorical classification can be converted to a dimensional one and vice versa. They state that neither approach, in of itself, is better than the other but that it is important to recognise that for certain tasks a categorical approach is best and for others a dimensional approach is best.

## Longitudinal Research

Longitudinal research provides an important insight into the course of PDs, which is important in terms of how we theoretically define them. It also helps to inform clinician's attitudes and available treatment options for this population. However, there are methodological considerations that must be taken into account when longitudinal research is undertaken (see table 2).

Table 2: Methodological considerations in longitudinal studies (Morey and Hopwood, 2012)

<b>Issue</b>	<b>Examples</b>
Construct definition	Dimensions, categories, traits, disorders and functioning
Type of stability	Differential, absolute, inter-individual, structural, ipsative
Instrumentation	Self-report, interview, informant report, behavioural performance, narrative
Assessment reliability	Reliability, stability
Sampling	Clinical, student, community, children, aging

Although PDs have been classified using a categorical model since their inception, considerable research has been devoted to examining the utility of dimensional models in the assessment/investigation of PDs (Morey et al, 2002, 2007; Skodol et al, 2005b; Widiger, 2007). As mentioned above, the dimensional approach has been shown to predict and reflect current diagnostic criteria whilst also adding to them by providing greater accuracy and precision. It has been argued to be especially useful in explaining co-morbidity (Hoermann, Zupanick and Dombeck, 2005; De Clercq, De Fruyt and Widiger, 2009). Despite this, the American Psychiatric Association

Board of Trustees decided to retain the DSM-IV categorical approach and therefore, this approach was used to define a BPD diagnosis within this review.

There have been many reviews completed over the years with regards to the stability of BPD and PDs in general (Morey and Hopwood, 2012; Clark, 2005; Drake and Valliant, 1988). However, systematic review of these studies has not been undertaken to combine and review the outcome, with the aim of providing an overview of the naturalistic course of BPD over time. The question this review set to answer was how many participants with a diagnosis of BPD at baseline retained that BPD diagnosis at subsequent follow-ups?

## Methods

### Search Strategy

The electronic databases PsychInfo, Medline and Embase were searched through OVID on 9<sup>th</sup> January 2015. The following key words were used: “borderline personality disorder”, “personality disorder”, “characterological disorder”, “personality pathology”, “longitudinal studies”, “cohort studies” and “follow up studies” (see appendix 2 for full search terms). Screening of titles and abstracts was then undertaken by the author and articles were excluded if they were not relevant to the primary question. Full articles were then reviewed and included if they met inclusion and exclusion criteria.

### Inclusion and Exclusion Criteria

1. Study to include a reliable measure of Borderline Personality Disorder, for example, DIB.
2. BPD diagnosis according to the DSM categorical criteria.
3. Studies that examined only short term test-retest reliability were not included. A 3 month minimum longitudinal period was required for study inclusion. This minimum was chosen to eliminate studies where test re-test reliability rather than personality stability is the primary aim. Although any time cut off is arbitrary, personality change in less than 3 months is unlikely (Ferguson, 2010).
4. Participants were 18 years old or older at baseline assessment.
5. Treatment outcome studies control groups were included, if the control group was a “waiting list” or “delayed treatment” group.
6. The borderline personality group had to be identifiable and their data able to be extracted from studies where other personality disorders were included.
7. Studies written in the English language.

## Data Extraction

Studies that met the inclusion/exclusion criteria were examined and relevant data was extracted by the author (SR). This data included study aims and design, including the number of waves of data collection and follow-up period, as the methodology used had implications with regard to the quality of the research and the robustness of the study's results. The age of participants at baseline was also extracted to ensure that all included studies met the inclusion/exclusion criteria.

The number of participants with a diagnosis of BPD at baseline and subsequent follow-ups was extracted which enabled the author to answer the primary research question. The percentage of participants with a BPD diagnosis at follow-up was used to indicate how stable this diagnosis was over time, which has been used in previous research in relation to other disorders (Whitty, Clarke, McTigue, Browne, Kamali and Larkin, 2005; Ghazon-Shahi, Roberts and Parker, 2009; Atwoli, 2012). BPD stability was rated using the scale in table 3.

Table 3: Stability ratings

Percentage of participants who retained a BPD diagnosis	Stability Rating
80% or above	Excellent Stability
60% - 79%	Good Stability
40% - 59%	Fair Stability
Less than 40%	Poor Stability

## Quality Assessment

One of the most important aspects of any study is quality control, as the integrity of the conclusions drawn by a study are, in large part, determined by the quality of the data collected. Many aspects of data collection can impact on the quality of the data, including completeness and clarity of questionnaires, and the interviewer's delivery and measurement techniques (Whitney et al, 1998). Longitudinal research is open to threats to validity, affected by selection, attrition, instrumentation and regression to the mean (Shadish, Cook and Campbell, 2002).

A number of consensus statements have encouraged higher quality of reporting, including recommendations for reporting systematic reviews; (QUOROM), randomised trials (CONSORT); studies of diagnostic tests (STARD); meta-analyses of observational studies (MOOSE) and observational epidemiological studies (STROBE). These are all aimed at authors of reports, not those seeking to assess the validity of what they read (Sanderson, Tatt and Higgins, 2007).

There is currently no widely accepted tool for assessing the methodological quality of longitudinal studies (Karunanathan, Bergman, Beland and Hogan, 2009). A review by Sanderson et al (2007) highlighted a lack of a single obvious candidate tool for assessing quality of longitudinal studies. The development of the consensus statements above by experts were therefore a suitable starting point for the development of a quality tool for this systematic review.

Sanderson et al (2007) also reported 3 fundamental domains that should be included in a quality tool: appropriate selection of participants, appropriate measurement of variables and appropriate control of confounds. Their broad recommendations state that tools should:

- 1) Include a small number of key domains
- 2) Be as specific as possible (with due consideration of the particular study design and topic area)
- 3) Be a simple checklist rather than a scale
- 4) Show evidence of careful development and of their validity and reliability

## **Design and Sampling**

A prospective longitudinal study follows samples into the future, allowing researchers to track events as they occur. Conversely, a retrospective longitudinal study examines past events (Loeber & Farrington, 1994). By collecting prospectively the problems of recall bias that occur in retrospective studies are avoided, and there is less need to rely on administrative records, which may have recording problems and may not always contain all the information required.

As with other research the importance of careful discussion of the properties of the sample; the population under study and the generalisability of the results cannot be overestimated. Factors such as age, gender, education level, socio-economic status and ethnicity should all be taken into consideration. Sample sizes should be justified through use of a power calculation so that researchers are not capitalising on chance.

### **Instrumentation and Measurement**

The use of two waves of longitudinal data (even separated by a long period of time) is an extremely limited design for investigating stability or change because a) the amount of change between time 1 and time 2 cannot tell anyone anything about the shape of each person's individual growth trajectory over the long term and b) with only two waves of data estimates of true change cannot be gained from the observed data (Lenzenweger, 2006). Test-retest studies are useful however, such studies simply cannot illuminate long term stability issues. A multi-wave design allows for effective examination of the major classic vantage point on stability. (Lenzenweger, 2006)

It is well known in the assessment literature that memory of information about a prior assessment impacts adversely on the validity of a current or subsequent assessment (Nunnally and Bernstein, 1994). Therefore, it could be argued that a study seeking to inform the scientific issue of long-term stability (or change) for PDs cannot do so effectively without the use of multiple blinded assessment across study waves (Lenzenweger, 2006).

Based on longitudinal research methodology literature it was deemed important to maintain independence between the measure used to select participants for the study and the primary measures of PD used within the study. This means that the independent variable used for selection is then not analysed as the dependent measure in the study.

In order to draw valid conclusions from data collected it is essential to minimise attrition (Loeber and Farrington, 1994). Where participants are lost to follow up it is important for researchers to check how participants lost may differ from those



retained. Loeber and Farrington (1994) suggested that the longer the duration of a longitudinal study, the more likely that selective attrition will occur. Guterman (2004) raises the point that: ‘Participant dropout from longitudinal population-based studies becomes especially problematic when the base rates of the problem under study are relatively low’. This could lead to substantial sample bias and loss of the statistical power necessary to find study effects.

Using all of the information above the researcher developed quality criteria for this review (appendix 3). All included studies were rated using this criteria by the author (SR) and separately by a colleague (JP) who was blind to the initial ratings. There was moderate agreement between the blind ratings ( $k=0.6$ ,  $p<0.001$ ), with disagreements between ratings discussed and agreed upon.

Inspired by the GRADE approach (BMJ, 2012) the studies were then rated for the overall quality of evidence for the specific outcome of this review. The GRADE approach assesses: methodological flaws, consistency of results and generalisability of results. Therefore the assessment criteria chosen as the main indicators of quality for this review were (see appendix 3 for an expanded explanation of the indicators):

- Valid measure of BPD
- Missing data handled appropriately
- Data collection satisfactory
- Unbiased selection of cohort

An adapted GRADE table was developed for this review (see table 4), which identifies the basis of the researchers judgements about evidence quality. High quality was assumed (4 points) with a point deducted for each indicator that was rated “No” during the quality assessment.

Table 4: GRADE table for overall quality rating.

<b>Overall Quality Rating</b>	<b>Scoring</b>
High	<b>4</b> (zero ratings of “No” on the indicators)
Moderate	<b>3</b> (1 rating of “No” on the indicators)
Low	<b>2</b> (2 ratings of “No” on the indicators)
Very Low	<b>1</b> (3 or more ratings of “No” on the indicators)

## Results

Following the selection procedure described below (Figure 1), 12 studies met all of the study requirements. These studies were then evaluated on the basis of their methodological quality according to the criteria detailed previously. The study characteristics and quality ratings are shown below:

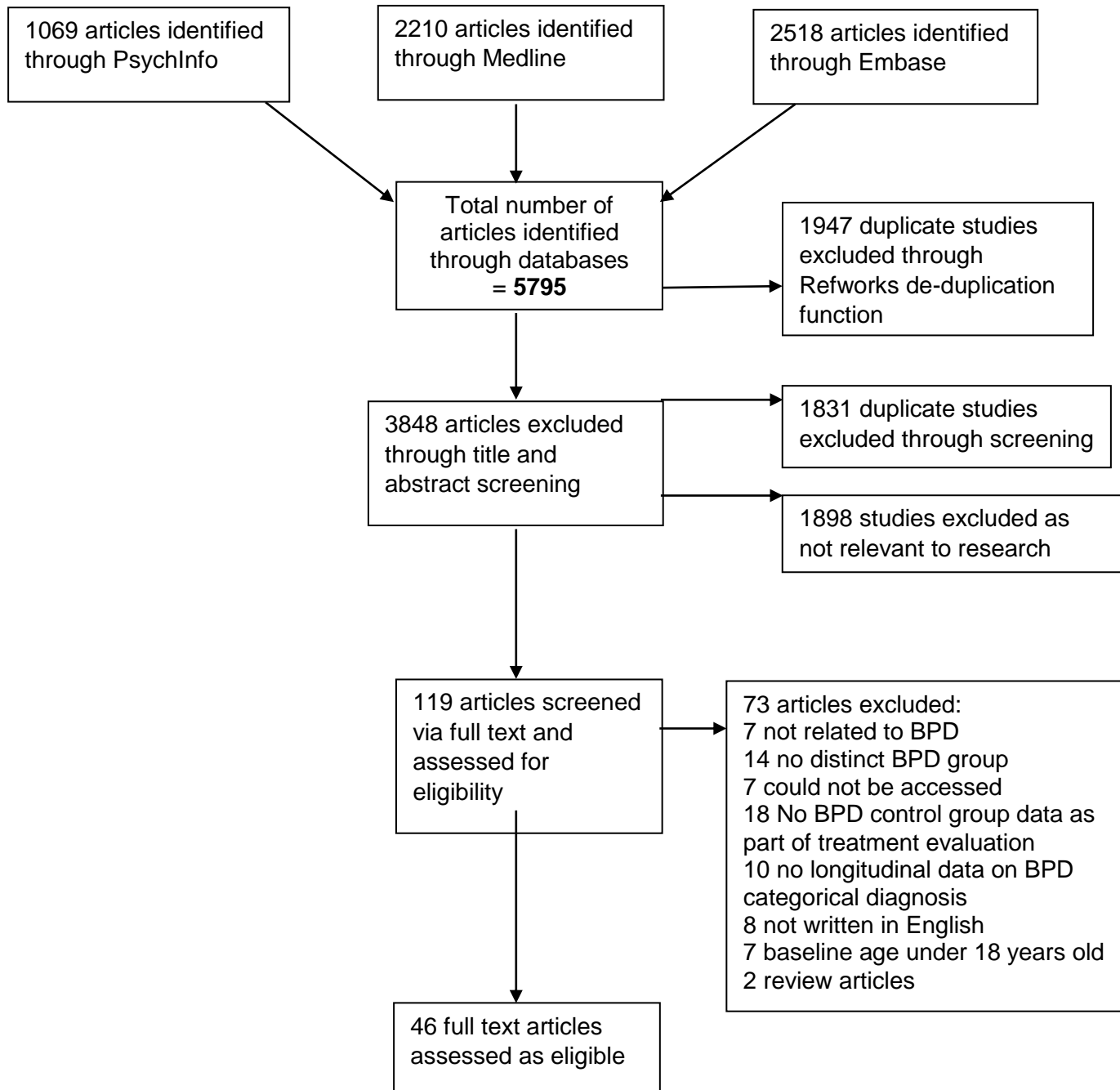


Figure 1: Prisma Diagram of study selection results

Table 5: Final articles included separated into the studies they represent data from.

<b>Cohort</b>	<b>Main Author (Year of Study Inception)</b>	<b>Number of articles related to the particular study</b>
1	Barasch (1985)	1
2	Mulder (2010)	1
3	Trull (1993)	1
4	Senol (1997)	1
5	Paris (1987)	2
6	Melatin (2010)	1
7	Lenzenweger (LSPD) (1999)	5
8	Links (1992)	6
9	Riihimaki (2014)	1
10	Ferro (1998) findings extended by Durbin	2
11	Mary C. Zanarini (MSAD) (1993)	10
12	Gunderson (CLPS) (2000)	15

Study characteristics were extracted from each study and are displayed in the table on the next page (table 6).

Table 6: Study Characteristics

Cohort	Author (Date)	Study Aims	Study Design	Age range of participants (years)	Gender of participants (n)	Number of waves of data collection	Follow-up period (months)
1	Barasch (1985)	To measure BPD diagnostic stability over time	Prospective	18-45	Not stated	2	36
2	Mulder (2010)	To examine PD diagnoses and symptoms over time	Prospective	Over 18	111 Female 84 Male	2	18
3	Trull (1993)	Evaluate relationship between mood change and PD scores	Prospective	Over 18	32 Female 12 Male	2	6
4	Senol (1997)	Short term follow-up of outcome in BPD patients	Retrospective	18-46	33 Female 42 Male	2	24-48
5	Paris (2001)	Investigated outcome of BPD patients	Retrospective case review then prospective follow-up	18-35	84 Female 16 Male	3	324
6	Melartin (2010)	Investigate stability of PD symptoms	Prospective	20-60	139 Female 54 Male	3	18
7	Lenzenweger (1999)	Life span study of PD stability	Prospective	Over 18	133 Female 117 Male	3	48
8	Links (1992)	Investigated course and outcome in BPD patients	Prospective	18-65	Unclear	3	84
9	Riihimaki (2014)	Investigated outcome in depressive patients with and without BPD	Prospective	20-69	30 Female 5 Male	4	60

Table 6: Study Characteristics continued

Cohort	Author (Date)	Study Aims	Study Design	Age range of participants (years)	Gender of participants (n)	Number of waves of data collection	Follow-up period (months)
10	Ferro (1998)	Examined stability of categorical and dimensional indices of PD	Prospective	18-60	102 Female 40 Male	5	120
11	Zanarini (1999)	Characterised course of BPD	Prospective	18-35	187 Female 46 Male	7	192
12	Gunderson (2000)	Investigated stability of PD diagnoses – course and stability of symptoms	Prospective	18-45	131 Female 44 Male	18	120

Table 7: Quality Assessment Criteria

<b>Cohort</b>	<b>Author (Year)</b>	<b>Unbiased selection of cohort</b>	<b>Sample size justified</b>	<b>Adequate description of sample</b>	<b>Valid measure of BPD</b>	<b>Data collection satisfactory</b>	<b>Missing data handled appropriately</b>	<b>Analytical methods appropriate</b>
1	Barasch (1985)	Partially	No	No	Yes	Partially	No	Unclear
2	Mulder (2010)	Yes	No	Partially	Yes	No	No	Yes
3	Trull (1993)	Partially	No	Yes	Yes	No	Partially	Yes
4	Senol (1997)	No	No	Partially	Yes	No	No	Partially
5	Paris (2001)	Partially	No	Yes	Yes	Partially	Yes	Partially
6	Melartin (2010)	Yes	Partially	Yes	Yes	No	Partially	Yes
7	Lenzenweger (1999)	Yes	No	Yes	Yes	Yes	Yes	Yes
8	Links (1992)	Partially	Unclear	Partially	Yes	Partially	Partially	Yes
9	Riihimaki (2014)	Yes	Partially	Yes	No	Partially	Yes	Yes
10	Ferro (1998)	Yes	No	Yes	Yes	Yes	Partially	Partially
11	Zanarini (1999)	Partially	No	Yes	Yes	Yes	Partially	Yes
12	Gunderson (2000)	Yes	Yes	Yes	Yes	Partially	Partially	Yes

Table 8: Results from included studies

Cohort	Author (Year)	Number of BPD diag. at baseline	Number of BPD diagnoses at follow-up (%)	Conclusions	Overall Quality Rating
1	Barasch (1985)	10	6 (60%)	Good stability	Moderate
2	Mulder (2010)	19	6 (32%)	Poor stability	Low
3	Trull (1993)	4	4 (100%)	Excellent stability	Moderate
4	Senol (1997)	45	43 (96%)	Excellent stability	Very Low
5	Paris (2001)	100	25 (25%) after 15 years 5 (5%) after 27 years	Poor stability	High
6	Melartin (2010)	19	8 (42%) after 6 months 6 (31%) after 18 months	Poor to fair stability	Moderate
7	Lenzenweger (1999)	33	17 (52%)	Fair stability	High
8	Links (1992)	88	39 (44%) after 2 years 27 (31%) after 7 years	Poor to fair stability	High
9	Riihimaki (2014)	35	20 (57%)	Fair stability	Moderate
10	Ferro (1998)	16	7 (44%) after 2.5 years 8 (50%) after 5 years 6 (38%) after 7.5 years 7 (44%) after 10 years	Poor to fair stability	High
11	Zanarini (1999)	290	192 (66%) after 2 years 159 (58%) after 4 years 135 (50%) after 6 years 118 (45%) after 8 years 108 (42%) after 10 years 101 (41%) after 12 years 86 (37%) after 14 years 81 (35%) after 16 years	Good stability over 2 years, fair stability over 12 years, poor stability over 16 years. Stability decreases as time increases.	High
12	Gunderson (2000)	175	83 (47%) after 1 year 72 (41%) after 2 years 55 (31%) after 3 years 39 (22%) after 4 years 34 (19%) after 5 years 34 (19%) after 6 years 28 (16%) after 7 years 16 (9%) after 8 years 16 (9%) after 9 years 5 (3%) after 10 years	Fair stability after 2 years then poor stability after 10 years.	High

## Summary of Findings

The studies critiqued below are presented according to their study design.

### **Prospective 2 wave design**

Barasch (1985) found that over 3 years, 6 participants out of 10 (60%) retained the BPD diagnosis. Barasch (1985) therefore suggested that BPD was relatively stable over time. However, the BPD sample was relatively small and there was no mention of how participants lost to follow-up may have differed from those retained, introducing the potential of bias towards those who were retained. The 2-wave design is a major flaw as this does not allow us to examine the long-term course of BPD and is not a reliable way to test stability over time, which impacts on the quality of the study. However there was blind assessment at follow-up which protects against memory bias and a valid and reliable measure of BPD was used. Conversely there was no information detailing the gender of participants and therefore this may be another area of bias; questioning the generalisability of the study results. Therefore, the overall quality of this study was rated moderate.

Mulder (2010) found that 6 out of 19 (32%) participants retained their BPD diagnosis from baseline to follow-up. Mulder (2010) suggested that in general PD symptoms improved over time with the reliability of categorical diagnoses and symptoms generally showing low stability in patients with major depression. Again the sample size was small in relation to BPD and some of the sample were treated for depression: potentially producing bias. It was unclear which participants were treated. All participants were diagnosed with depression, although this was taken into consideration during assessment of BPD, which may reduce this bias and increase the generalisability of the results. Follow-up raters were blind to original data: controlling for memory bias but there was no mention of whether there were differences between those lost to follow-up and retained potentially producing bias. Again the major flaw is the 2 wave design which limits the reliability and validity of the results. Therefore, the overall quality of this study was rated low.

Trull (1993) found that all participants with BPD at baseline (4) retained this diagnosis at follow-up. Trull (1993) concluded that BPD diagnoses were relatively



stable over time. However this study only had a 2 wave design that was separated by 6 months, which PD literature suggested is not enough time to detect PD change. The same researcher made diagnoses at baseline and follow-up introducing memory bias, although Trull (1993) argues against this stating that differences in interviewers scoring could confound with true change over time. Although this may happen there are ways to control for this using multiple raters and reporting kappa coefficients. Again the BPD sample was very small and therefore it was difficult to draw valid and reliable conclusions from this study. Hence, the overall quality of this study was rated moderate.

### **Retrospective Studies**

Senol (1997) found that 96% (43 out of 45) of patients retained a diagnosis of BPD after 2-4 years. The retrospective design potentially introduces recall bias and there was reliance on administrative records which may have recording mistakes or may not always contain all the information required. The follow-up rater was not blind to the retrospective diagnosis and therefore memory bias was not controlled for. Forty percent of participants were lost to follow-up and there was no indication of consideration about differences between the participants retained and lost to follow-up, creating bias in the results towards those who were retained. Again a 2 wave follow-up design as well as the retrospective design impacts negatively on the quality of this study and therefore its overall quality was rated very low.

Paris et al (1987) found that a quarter of participants (25 out of 100) with BPD at baseline retained that diagnosis at follow-up 15 years later and that only 5% (5 out of 100) retained this diagnosis 27 years after the baseline assessment. Paris et al (1987) stated that there was a shift in the majority of their sample to a non-borderline diagnosis across the Diagnostic Index for Borderlines scores. They suggested that this supports the idea that active BPD pathology changes with age. The wave 3 data (Paris et al, 2003) results demonstrated that patients with BPD continued to improve in later middle age. The sampling of this study tended to favour inpatient affecting the generalisability of these findings. The only significant difference between participants lost to follow-up and those retained were that those retained were younger at baseline assessment. Therefore, the study was able to control for retention

bias to some extent. Follow-up raters were blind to baseline diagnosis at wave 2 but not wave 3, introducing the possibility of memory bias. However, given the length of time between assessments (12 years) this is unlikely. The reliability of the results is called into question as inter-rater reliability for measures at follow-up were not completed and therefore may bias the results towards the particular rater and show change that isn't reflective of true change over time. The 3 wave design adds to the robustness of the results, although the baseline diagnoses were decided retrospectively introducing recall bias. While the total length of time provided information on the course of BPD over a number of years, data was only collected at 15 and 27 years after baseline. Conclusions can therefore only be drawn at these time points and do not indicate the course between these time points. The overall quality of this study was therefore rated high.

### **Prospective multi-wave design**

The Vantaa Depression Study (Melartin, 2010) found 8 out of 19 (42%) participants diagnosed with BPD at baseline retained this diagnosis. Melartin (2010) suggested that the categorical stability of BPD diagnoses was poor. They also found that the mean number of criteria met decreased significantly, particularly over the first six months. The 3 wave design improves the quality of this study, but this was over a short time period (18 months) meaning that the longer term course of BPD was not investigated. While the participants were representative of the population, it may be difficult to generalise these results beyond patients with BPD and co-morbid depression. Participants lost to follow-up were slightly more paranoid and exhibited more anxiety symptoms at baseline. Although the authors stated that this was unlikely to bias the results of BPD stability, this is questionable. The reliability of the PD diagnoses were not formally tested impacting on the quality of the data presented. The authors argued that the same interviewer was used for each assessment and therefore this would control for the reliability of BPD diagnoses, which may be true. However, there is an additional bias produced through this methodology which was not controlled for (memory bias). Therefore, the overall quality rating for this study was moderate.

The Longitudinal Study of Personality Disorders (LSPD) (Lenzenweger, 1999) found that the majority of participants (52%) with BPD symptomatology experienced considerable remission of moderate and severe symptomatology. However, the major flaw with this study in helping to investigate the aim of this review is that categorical diagnoses could not reliably be evaluated for stability owing to the low prevalence and the sample being a non-clinical population, which impacts on the generalisability of these results to patients with BPD. Consequently, this study was rated high for quality, however the results make it difficult to answer the question posed by this review.

The Canadian study of PD (Links et al, 1988, 1993, 1995, 1998, 1999) found that 31% (27 out of 88) of participants still met BPD criteria 7 years after baseline assessment and that impulsivity was a central feature as to whether participants remitted or retained the BPD diagnosis. Links et al (1993) did not state whether follow-up data was collated by a researcher who was blind to the original diagnosis therefore, introducing the possibility of memory bias. There were significant differences between those who were retained and lost to follow-up introducing bias within the sample. These included drop outs tending to be younger, more impulsive, single, male and diagnosed as having co-existing anti-social PD. Therefore this limited the generalisability of the results. The participants were also all recruited from inpatient settings again impacting on the generalisability of these results. The prospective multi-wave design adds to the robustness of the results as well as the length of time examined (7years) however, this could have been improved upon by having more data collection points over this time. Therefore, the overall quality rating for this study was high.

Riihimaki et al (2014) also part of the Vantaa Depression study found that co-morbid depression and BPD usually persisted over 5 years (35 BPD diagnoses at baseline and 20 retained BPD diagnosis at follow-up, 57%). The 4 wave design would add to the robustness of these results however, the authors only reported comparison data from baseline and 5 years which equates to 2 waves of data impacting on the quality of the results from this study and the availability of data over a longer time span. As stated above the generalisability of the results is biased by the cohort being recruited from a depression study. However, attrition rate was relatively low and there were no

biases with regard to the cohort retained over follow-up. Consequently, the overall quality rating for this study was moderate.

Ferro (1998) found that 7 participants out of 16 (44%) retained their BPD diagnosis and suggested that BPD was less stable than had been hypothesised, commenting that it was broadly comparable to that of axis-I stability. Again the BPD sample was small however, Ferro (1998) explored differences between participants retained and lost to follow-up: with the only significant difference being those retained had higher levels of education. Therefore, it is unlikely that attrition produced bias in the results. A wide range of sampling was used and follow-up interviews were blind to baseline data: excluding memory bias from the results. Again a major flaw is the 2-wave design as previously mentioned. However, Durbin and Klein (2006) extended Ferro's findings across a 10 year period and collected data on the same population for a further 3 time points. This adds to the robustness of the findings which supported Ferro's original conclusions that BPD was not as stable as expected over time with Durbin and Klein (2006) stating that the 10 year stability of categorical diagnoses was relatively poor. Generalising these results would be limited by the sample, which was comprised only of depressed patients: which biases the results. However, the overall quality rating for this study was high.

The McLean Study of Adult Development (MSAD) (Zananrini et al, 2014) found that symptomatic improvement was both common and stable among once highly disturbed borderline patients. Also that symptomatic prognosis for most, but not all, borderline patients with illness severity was better than previously recognised. They found that over 16 years the number of participants with a BPD diagnosis fell from 290 to 192 (66%) 2 years post baseline, then to 81 (35%) 16 years post baseline. There are many methodological strengths to this study which include multi-wave assessment, every 24 months for 16 years by trained staff blind to previous assessment results, controlling for memory bias; and a relatively high level of retention of participants over time (80%). All participants were recruited from an inpatient setting and most were in some sort of treatment therefore, compromising the generalisability of these results. However, as previously stated, it is likely that most BPD patients will have some sort of treatment through the course of their life

and therefore the naturalistic course of BPD is likely to include treatment. Therefore, this study was rated high for overall quality.

The Collaborative Longitudinal Personality Disorders (CLPS) (Gunderson et al, 2000) study found that the ten year course of BPD is characterised by high rates of remission and low rates of relapse. Over the ten year period they found that 3% (5 out of 175) of participants with BPD remained stably disordered at ten years. All BPD criteria had similar rates and levels of decline over time with findings failing to show that any of BPD's 3 major phenotypes (affective, behavioural or interpersonal) have a distinctive pattern of stability. There are many methodological strengths to this study which adds robustness to their findings. Participants were recruited from a large range of clinical settings and were assessed prospectively every 6 months by clinically competent trained interviewers who were blind to previous assessments. It used reliable instruments and was able to analyse stability, whilst taking into account reliability, comorbidity, life events and treatment variables. All participants were treatment seeking which may introduce bias into the results however, treatment effects were controlled for and the advantage of this type of sample is that it is clinically relevant. In reality it is also likely that the majority of individuals with BPD will come into contact with psychiatric treatment and therefore this may be part of the naturalistic course of BPD. Consequently, the overall quality rating for this study was high.

Figures 2, 3 and 4 show the results from each of the included studies in relation to the question posed by this review: "how many participants diagnosed with BPD at time 1 retain that BPD diagnosis at subsequent follow-ups?"

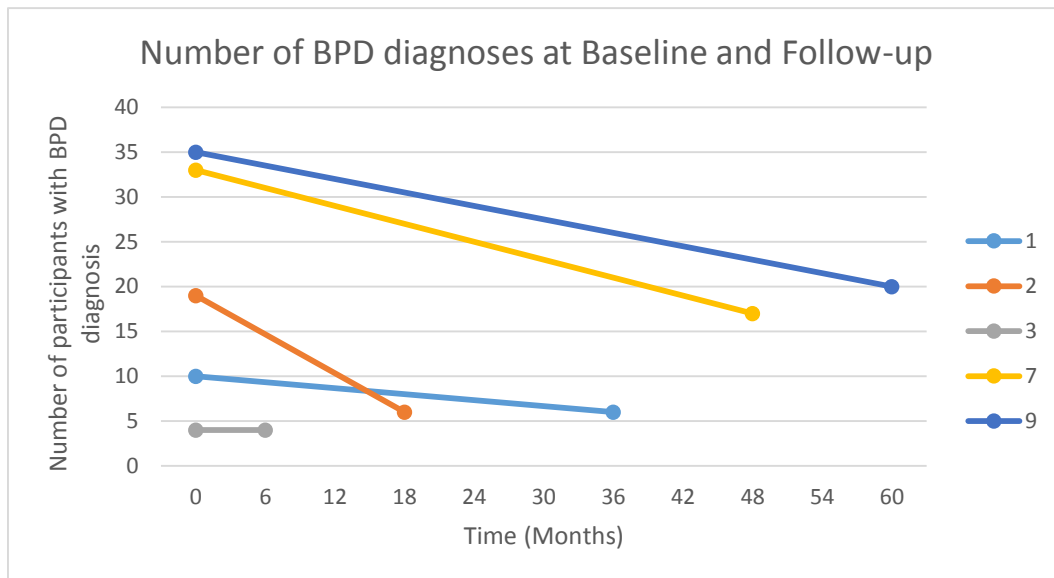


Figure 2: Results from prospective (2-wave) studies  
 1 = Barasch, 2 = Mulder, 3 = Trull, 7 = Lenzenweger et al, 9 = Riihimaki et al.

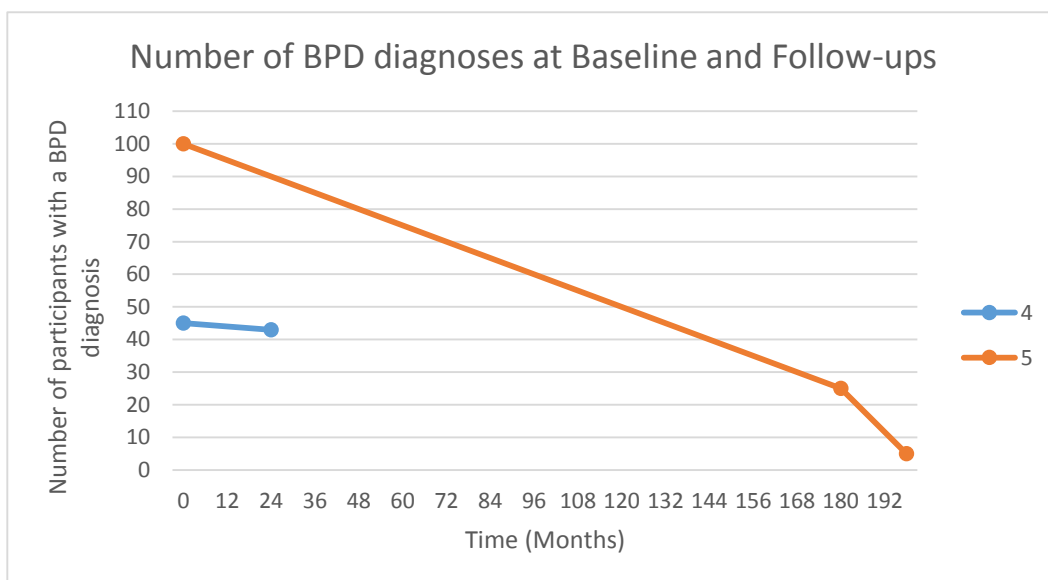


Figure 3: Results from studies with retrospective data.  
 4 = Senol et al, 5 = Paris et al.

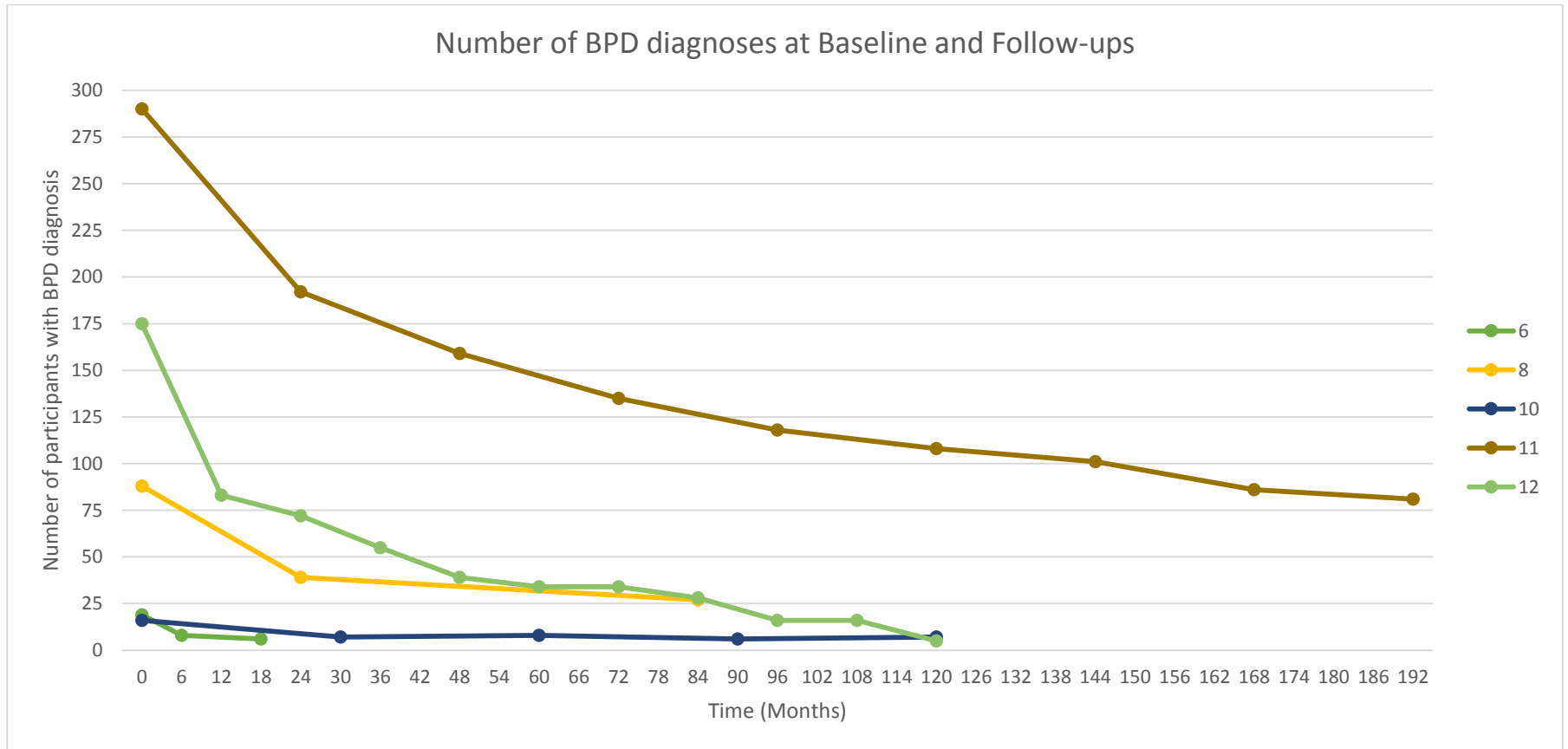


Figure 4: Results from multi-wave prospective studies.  
6 = Melartin et al, 8 = Links et al, 10 = Ferrer, 11 = Zanarini, 12 = Gunderson et al.

## Discussion

This systematic review aimed to investigate the naturalistic course of BPD. To do this studies were examined to see how many people with a diagnosis of BPD at baseline retained that diagnosis at subsequent follow-ups over time. As stated previously, there is an assumption that the stability of BPD is a central defining feature of this Axis-II disorder in the DSM (American Psychiatric Association, 2000). Diagnostic change over time may reflect the natural evolution of a disorder, the emergence of previously unavailable information or unreliable measurements (Whitty et al, 2005). Poor diagnostic stability has potential implications not only in terms of patient health, but also in terms of service planning and resource allocation (Whitty et al, 2005).

Much of the earlier research and studies that employed a 2 wave design tended to find that patients diagnosed with BPD at baseline retained that diagnosis at follow-up: (Barasch, 1985; Trull, 1993; Senol, 1997; Riihimaki, 2014) suggesting that the BPD diagnosis had good to excellent stability over time. Only one study reviewed (Mulder, 2010) did not find this. However, these studies had major methodological flaws, resulting in their quality being rated as very low or moderate, that preclude firm conclusions from being drawn from them including: small sample sizes, inattention to inter-rater reliability, lack of blindness to baseline diagnosis, reliance on only two assessment time points, typically short follow-up periods, insufficient characterisation of co-occurring disorders and treatment received.

More recently, large scale multi-wave studies of PD's have tried to overcome the methodological shortcomings of previous work (CLPS, MSAD, and LSPD). They have succeed in doing this, producing high quality studies, although given the limited number of these studies more needs to be done to replicate findings and add weight to the conclusions they have drawn. The CLPS study found surprising rates of improvement in patients diagnosed with BPD (Grilo et al, 2004). Ten percent of patients with BPD remitted in the first six months: most often in association with situational changes, such as leaving stressful relationships, raising questions about whether certain PDs are more temporally fluctuating (Gunderson et al, 2003). The 10 year course of BPD was characterised by high rates of remission and low rates of



relapse. These results were examined to see if methodological techniques accounted for the improvement, which was not found. This evidence suggests that patients with BPD at baseline are unlikely to retain a BPD at follow-up over a 10 year period providing support from other findings that BPD diagnoses had poor stability over time.

The most striking finding from the MSAD was the degree of improvement in BPD patients: with only 35% of participants with a BPD diagnosis at baseline retaining this diagnosis at follow-up. This evidence therefore suggests that patients with BPD at baseline are unlikely to retain a BPD diagnosis at follow-up: consequently, highlighting the poor stability of the BPD diagnosis over time.

Although not able to examine categorical BPD diagnosis the results are further supported by the LSPD (Lenzenweger, 1999) which found that BPD features exhibited considerable change over time, with results showing existence of rapid remission trajectories for BPD. PD features showed considerable variability across individuals overtime which provides compelling evidence that does not support the assumption that PD features are enduring and stable overtime.

The large scale multi-wave studies results are also support by smaller multi-wave studies (Paris et al, 1987; Ferro, 1998; Durbin and Klein, 2006; Melatin, 2010). The quality of these studies is high given their multi-wave prospective designs, selection and description of cohorts, however, there are some methodological limitations to these such as short time spans and retrospective data being used. Nevertheless, the results of these high quality studies also suggested that categorical BPD diagnoses have poor stability over time.

Overall, it appears that the available methodologically sounds evidence suggests that patients diagnosed with BPD at baseline are less likely to be diagnosed with BPD at subsequent follow-ups therefore, proposing that the BPD diagnosis has poor stability over time. The studies that support this conclusion reported poor stability: number of participants retaining a BPD diagnosis at follow-up being less than 40%. The studies ranged from 3% to 35% of participants retaining a BPD diagnosis at subsequent follow-ups.

## **Theoretical and Clinical Implications**

These results therefore suggest that BPD is less stable than assumed by current DSM conceptualisations. It questions the conceptualisations of BPD as a stable disorder. It may be that personality disorders are stable but the criteria currently used to define them does not adequately capture what is stable about them. There are also several factors that may influence the stability of BPD such as gender, severity of BPD and co-morbidity. These factors would be worth further investigation into the role that they may play in relation to BPD stability over time. Further research to compare the group of participants who retained their BPD diagnosis with those who did not would also be beneficial in investigating this further. This would enable researchers to tease out what may be stable about the BPD diagnosis or would further support the hypothesis that BPD is not stable. The DSM continues to use a categorical system for BPD classification which may be flawed. As mentioned earlier, there may be high variation in individual's symptom profiles, i.e. the 5 out of 9 criteria each individual meets may be different. This has the potential to impact on the stability of the categorical diagnosis unless the participants all have the same 5 criteria for their BPD diagnosis. An interesting note is the idea of logical circularity proposed by Kupfer and Thase (1989) with regard to the process of development and validation of diagnoses. They highlight that a clinical categorical diagnosis of a disorder can be used to validate a dimensional diagnosis of that disorder that can then be used in research to shed light on the disorder of interest. The hypothesised outcome of which would be to produce insights that could be used to improve (reliability, validity) of dimensional diagnosis and to identify optimal cut-off points for different clinical uses to improve clinical categorical diagnoses. Ideally each cycle of research/clinical application would improve the quality of diagnosis (Kuper and Thase, 1989). Overall, more research is required into theories of dimensional models of BPD and PDs in general.

The results from this review have clinical implications in terms of providing a more positive perspective on outcome for patients with BPD. The majority of participants within the studies were treatment seeking inpatients and outpatients making these results clinically relevant. It would be favourable for future research to examine more

closely the stability of each category comprising the BPD diagnosis with regard to the development of therapies targeted towards areas where change may be possible.

Understanding the lifetime course of BPD will have an impact on service and resource provisions. The figures (3 and 4) above show a decrease of BPD diagnoses over time. Therefore, it may be beneficial for patients to have intensive support from services in the early years of their BPD diagnosis however; more research would be needed to test this hypothesis. A lot of the literature tends to focus on working age adults with older adults being somewhat ignored. Consequently, this brings into question the lifetime course of BPD and PDs in general as the research is lacking in this area.

### **Limitations**

This review was limited by there not being a “gold standard” tool for reviewing the quality of observational longitudinal data, although the author tried to overcome this by developing quality criteria in line with methodological considerations for this type of data. This could be improved upon by multiple raters rating the studies using the quality criteria developed and kappa coefficients calculated. There was also a lack of pooled estimate to control for study size and meta-analytic analysis was not used. There are many ways in which stability can be measured and this review was limited by only examining categorical data, which some may argue is a simplistic view of BPD, however, this is currently how it is classified clinically and, therefore, is relevant. Consequently, it would be beneficial to expand on this review and provide a more in-depth picture of BPD criteria over time. Finally, the review was limited by the literature, in that it mainly focuses on working age adults and therefore, is unable to currently provide a life-span perspective, which future research will hopefully enable.

## **Conclusions**

The results of this review suggest that the categorical diagnosis of BPD has poor stability over time: with 3%-35% of participants retaining a BPD diagnosis over time. It appears that BPD diagnosis stability decreases over time (Zanarini, 1993; Gunderson, 2000). The multi-wave longitudinal studies of PD's have laid the foundations for this work in a methodologically sound way, which needs to be continued and replicated to increase our understanding of the lifespan course of BPD.

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## **Appendix 1: Author Guideline for the Journal of Personality Disorders**

### **Journal of Personality Disorders - Instructions to Authors**

#### Types of Articles

**Regular Articles:** Reports of original work should not normally exceed 30 pages (typed, double-lined spaces, and with standard margins, including tables, figures, and references). Occasionally, an author may feel that he or she needs to exceed this length (e.g., a report of a series of studies, or a report that would benefit from more extensive technical detail). In these circumstances, an author may submit a lengthier manuscript, but the author should describe the rationale for a submission exceeding 30 pages in the cover letter accompanying the submission. This rationale will be taken into account by the Editors, as part of the review process, in determining if the increased length is justified.

**Invited Essays and Special Articles:** These articles provide an overview of broad-ranging areas of research and conceptual formulations dealing with substantive theoretical issues. Reports of large-scale definitive empirical studies may also be submitted. Articles should not exceed 40 pages including tables, figures, and references. Authors contemplating such an article are advised to contact the editor in advance to see whether the topic is appropriate and whether other articles in this topic are planned.

**Brief Reports:** Short descriptions of empirical studies not exceeding 20 pages in length including tables, figures, and references.

**Web-Based Submissions:** Manuscripts must be produced electronically using word processing software, double spaced, and submitted along with a cover letter to <http://jpd.msubmit.net>. Authors may choose blind or non-blind review. Please specify which option you are choosing in your cover letter. If you choose blind review, please prepare the manuscript accordingly (e.g., remove identifying information from the first page of the manuscript, etc.). All articles should be prepared in accordance with the Publication Manual of the American Psychological Association. They must be preceded by a brief abstract and adhere to APA referencing format.

Tables should be submitted in Excel. Tables formatted in Microsoft Word's Table function are also acceptable. (Tables should not be submitted using tabs, returns, or spaces as formatting tools.)

Figures must be submitted separately as graphic files (in order of preference: tif, eps, jpg, bmp, gif; note that PowerPoint is not acceptable) in the highest possible resolution. Figure caption text should be included in the article's Microsoft Word file. All figures must be readable in black and white.

**Permissions:** Contributors are responsible for obtaining permission from copyright owners if they use an illustration, table, or lengthy quote (100+ words) that has been published elsewhere. Contributors should write both the publisher and author of such material, requesting nonexclusive world rights in all languages for use in the article and in all future editions of it.

**References:** Authors should consult the publication manual of the American Psychological Association for rules on format and style. All research papers

submitted to the Journal of Personality Disorders must conform to the ethical standards of the American Psychological Association. Articles should be written in non-sexist language. Any manuscripts with references that are incorrectly formatted will be returned by the publisher for revision.

Sample References:

Davis, C. G., & McKearney, J. M. (2003). How do people grow from their experience with trauma or loss? *Journal of Social & Clinical Psychology*, 22(5), 477-492.

Dweck, C., & Wortman, C. (1982). Learned helplessness, anxiety and achievement. In H. Kron & L. Laux (Eds.), *Achievement, stress, and anxiety* (pp. 93-125). Washington, DC: Hemisphere Publishing Group.

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**Appendix 2: Full Search Terms and Search Strategy for each database; PsychInfo, Medline and Embase (searched on 9<sup>th</sup> January 2015 through OVID).**

**PsychInfo Search Strategy**

	<b>Search Terms</b>	<b>Results</b>	
1	Borderline Personality Disorder/	4303	
2	Personality Disorder/	9973	
3	Borderline state/	4064	
4	Personality Pathology .mp.	1197	
5	Characterological disorder .mp.	0	
6	1 OR 2 OR 3 OR 4 OR 5	17999	Search A
7	Longitudinal Studies/	15006	
8	Longitudinal Studies .mp.	20647	
9	7 OR 8	20647	Search B
10	6 AND 9	124	Export to Refworks
11	Cohort Analysis/	1075	
12	Cohort Analysis .mp.	1197	
13	11 OR 12	2203	Search C
14	6 AND 13	8	Export to Refworks
15	Follow up studies/	12317	
16	Follow up .mp.	84423	
17	15 OR 16	89385	Search D
18	6 AND 17	937	Export to Refworks

**Medline Search Strategy**

	<b>Search Terms</b>	<b>Results</b>	
1	Borderline Personality Disorder/	5073	
2	Personality Disorder/	14603	
3	Personality Pathology .mp.	596	
4	Characterological disorder .mp.	12	
5	Borderline states/	124	
6	1 OR 2 OR 3 OR 4 OR 5	18761	Search A
7	Longitudinal Studies/	86870	
8	Longitudinal Studies .mp.	95769	
9	7 OR 8	86870	Search B
10	6 AND 9	356	Export to Refworks
11	Cohort Studies/	169334	
12	Cohort Studies .mp.	177767	
13	11 OR 12	177767	Search C
14	6 AND 13	209	Export to Refworks
15	Follow up studies/	502935	
16	Follow up .mp.	926550	
17	15 OR 16	926550	Search D
18	6 AND 17	1645	Export to Refworks

## Embase Search Strategy

	Search Terms	Results	
1	Borderline Personality Disorder .mp.	5209	
2	Borderline states/	9253	
3	Personality Disorder/	22886	
4	Personality Pathology .mp.	685	
5	Characterological disorder .mp.	0	
6	1 OR 2 OR 3 OR 4 OR 5	30106	Search A
7	Longitudinal Studies/	71493	
8	Longitudinal Studies .mp.	15954	
9	7 OR 8	80461	Search B
10	6 AND 9	426	Export to Refworks
11	Cohort Analysis/	185129	
12	Cohort Studies .mp.	17193	
13	11 OR 12	193386	Search C
14	6 AND 13	310	Export to Refworks
15	Follow up/	865054	
16	Follow up studies .mp.	13046	
17	15 OR 16	871296	Search D
18	6 AND 17	1782	Export to Refworks

### Appendix 3: Quality Criteria used to rate the methodological quality of the included studies.

#### Quality Criteria defined

Grade each criterion “Yes”, “No”, “Partially” or “Unclear”

Factors to consider when making assessment are listed below:

1. Unbiased selection of the cohort?

Factors that help to reduce bias:

- Inclusion/exclusion criteria
  - Clearly described
  - Sample taken from a wide range of sources
- Recruitment strategy
  - Clearly described
  - Sample is representative of the population of interest – patients with diagnosis of BPD

Yes	Partially	No	Unclear
Inclusion/exclusion criteria clearly defined AND recruitment strategy clearly described the outcome being a representative sample is used (e.g. a convenience sample is not used)	Inclusion/exclusion criteria clearly defined OR recruitment strategy clearly defined with the outcome being a representative sample is used  Inclusion/exclusion criteria clearly defined AND/OR recruitment strategy clearly defined with the outcome of a convenience sample used	No inclusion/exclusion criteria defined AND no mention of recruitment strategy the outcome being a convenience sample is used	Mention of inclusion/exclusion criteria but unclear what this is and/or mention of recruitment strategy used but no details given

## 2. Sample size justified?

Factors to consider:

- Did the authors report power calculations or describe some other basis for determining the adequacy of sample size?

Yes	Partially	No	Unclear
Power calculation calculated and appropriate sample size obtained	Reasons given for the sample size used but not determined using a power calculation  There is mention of consideration of sample size but no calculations have been completed	No power calculation calculated and no indication of how sample size was decided	Not clear how the authors determined the adequacy of their sample size

## 3. Adequate description of sample?

Factors to consider:

- Consider whether the cohort is well characterised in terms of baseline demographics e.g. information such as age, gender and ethnicity
- Also consider education and socio-economic characteristics

Yes	Partially	No	Unclear
Sample characteristics have been described fully and information on participants age, gender, education AND/OR ethnicity/socio-economic status are detailed (need 3+ characteristics to be detailed – age, gender and education must be included)	Two of the characteristics below have been described: Age Gender Education Ethnicity Socio-economic status	One or none of the characteristics below have been described: Age Gender Education Ethnicity Socio-economic status	There is no clear description of sample characteristics

4. Valid measure for diagnosis of BPD used?

Factors to consider:

- Was a valid and reliable measure used to determine diagnosis of BPD?
- Were measures supplemented by other information for example, interview with relative or clinical interview?
- Were measures complete by appropriately trained professional?
- Were the same measures used in each wave of the study?
- Inter-rater reliability stated and at acceptable level?

<b>Yes</b>	<b>Partially</b>	<b>No</b>	<b>Unclear</b>
Valid and reliable measure of BPD administered by a trained professional, supplemented with additional information such as an interview with a relative  OR  Valid and reliable measure of BPD administered by a trained professional, not supplemented with additional information	Valid and reliable measure of BPD administered by someone who is not a trained professional (may be supplemented by additional information or not)	BPD measure used is not valid or reliable	No mention of BPD measure used



## 5. Data Collection was satisfactory?

Factors to consider

- Was the measure of BPD used to select participants to the study also used as an outcome variable within the study?
- Was assessor blind to previous BPD assessments across waves?

<b>Yes</b>	<b>Partially</b>	<b>No</b>	<b>Unclear</b>
All three criteria below are met: Measure used to select participants in relation to diagnosis of BPD is different from measure used within the study Assessors were blind to previous assessments More than 2 data collection points over longitudinal period	Two criteria below met: Measure used to select participants in relation to diagnosis of BPD is different from measure used within the study Assessors were blind to previous assessments More than 2 data collection points over longitudinal period	None or 1 of the criteria below met: Measure used to select participants in relation to diagnosis of BPD is different from measure used within the study Assessors were blind to previous assessments More than 2 data collection points over longitudinal period	Unclear whether the criteria below is met: Measure used to select participants in relation to diagnosis of BPD is different from measure used within the study Assessors were blind to previous assessments More than 2 data collection points over longitudinal period

## 6. Missing Data

Factors to consider:

- Did missing data exceed 20%?
- Consider attrition rates over time as a form of missing data
- If missing data is present and substantial, were steps taken to minimize bias?

<b>Yes</b>	<b>Partially</b>	<b>No</b>	<b>Unclear</b>
Missing data did not exceed 20% and attrition was controlled for	Missing data exceeded 20% but attrition was controlled for OR Missing data did not exceed 20% but attrition was not controlled for	Missing data exceeded 20% and was not controlled for	Mention that the authors controlled for missing data but not clear how they did this

7. Analytic methods appropriate?

Factors to consider:

- Was the kind of analysis done appropriate for the kind of outcome data?
- Did the authors control for repeated measures data?

<b>Yes</b>	<b>Partially</b>	<b>No</b>	<b>Unclear</b>
Appropriate analysis completed and repeated measures controlled for	Appropriate analysis completed but repeated measures not controlled for  OR  Inappropriate analysis completed but repeated measures controlled for	Inappropriate analysis completed and repeated measures not controlled for	Unclear how the data was analysed and if repeated measures were controlled for

## Thesis Aims and Hypotheses

Personality Disorder (PD) within the older adult population is a highly debated topic, with clinicians highlighting the presence of PD symptoms in this group and the need for appropriate therapies. Schema therapy (ST) is one intervention that has shown to be effective in the treatment of PD symptoms within a working age population. Therefore, this study aimed to explore the theoretical underpinnings of schema therapy in this population. The overall hypothesis was that there will be relationships between early maladaptive schemas, personality disorder symptoms and emotion regulation strategies in older adults with mental health problems. The main hypotheses are detailed below:

**Hypothesis 1:** Higher scores on Young's Schema Questionnaire –Short version 3 (YSQ-S3) will be associated with higher dysfunctional emotion regulation (ER) strategy scores on the Regulation on Emotion Questionnaire-2 (REQ-2) and higher Personality Disorder symptom scores on the Short Coolidge Axis Two Inventory-II (SCATI-II).

**Hypothesis 2:** Higher dysfunctional ER strategy scores on the REQ-2 will be associated with higher PD symptom scores on the SCATI-II.

**Hypothesis 3:** Higher YSQ-S3 scores and the use of more dysfunctional ER strategies, will predict higher PD symptoms scores on the SCATI-II.

## EMPIRICAL PROJECT JOURNAL ARTICLE

An investigation into the relationships between early maladaptive schemas, personality disorder symptoms and emotion regulation strategies in older adults with mental health problems.

Shonagh Reid<sup>1</sup>, Angus Lorimer<sup>1</sup>, Amber Keenan<sup>2</sup> and Paul Hutton<sup>3\*\*</sup>

<sup>1</sup> NHS Grampian, Older Adult Clinical Psychology Service, Block D, Royal Cornhill Hospital, Aberdeen, AB25 2ZH

<sup>2</sup> NHS Grampian, Department of Counselling and Clinical Psychology, Block A, Royal Cornhill Hospital, Aberdeen, AB25 2ZH

<sup>3</sup> School of Health in Social Science, University of Edinburgh, Edinburgh, EH1 2QL

Correspondence: [shonagh.reid@nhs.net](mailto:shonagh.reid@nhs.net) Telephone: 01224 557497

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\*\* This piece of work is written in its entirety by Shonagh Reid, Trainee Clinical Psychologist, supervised by Dr Paul Hutton, Academic Supervisor, Dr Angus Lorimer and Dr Amber Keenan, Clinical Supervisors. Supervisors' names are included on the article for publication purposes only, in acknowledgement of their intellectual contribution. Supervisors were not involved in the writing of this piece for the thesis.

\*\* This article is written in accordance with the Journal of Aging and Mental Health author guidelines (Appendix 1).

## Abstract

Objective: To examine the relationships between early maladaptive schemas, personality disorder symptoms and emotion regulation strategies used in older adults with mental health problems.

Methods: Sixty-two participants (aged 65-85years) were recruited from Aberdeen and Aberdeenshire Older Adult community mental health teams. Three self-report questionnaires were completed with each participant: measuring early maladaptive schemas, personality disorder symptoms and emotion regulation strategies used. Multiple regression analysis was completed to explore the predictive nature of the relationship between these variables.

Results: Significant relationships were found between the three variables investigated. Higher YSQ-S3 scores were associated with higher dysfunctional ER scores ( $r = 0.530$ ,  $p < 0.01$ ) and higher scores on the SCATI-II ( $r = 0.780$ ,  $p < 0.01$ ). Higher dysfunctional ER scores were also associated with higher SCATI-II scores ( $r = 0.640$ ,  $p < 0.01$ ). Analysis highlighted that YSQ-S3 scores and REQ-2 scores significantly predicted 69% of the variance in SCATI-II scores ( $F(2,59) = 66.36$ ,  $p < 0.01$ ,  $R^2 = 0.692$ ,  $R^2_{\text{adjusted}} = 0.682$ ).

Conclusions: To the author's knowledge, this study is the first of its kind to find support for the relationship between EMS, PD symptoms and the use of dysfunctional ER strategies, consistent with the schema therapy model, within an older adult population. It is hoped that future research will explore and expand on these results, with the ultimate aim of evaluating the effectiveness of schema therapy within this group.

**Key words:** Schema, personality, emotion regulation, older adults

**Word Count:** 4,874

## Introduction

Personality disorders (PD) are among the most complex aspects of human behaviour to understand and manage (Segal, Coolidge and Rosowsky, 2006). There is much debate as to the course, nature, prevalence and treatment of personality disorders across the life span. To date the majority of research within this field has focused on working aged adults, with more needing to be done to expand this research to older adults (Lynch, 2000; Abrams and Bromberg, 2006; Videler, van Royen and van Alphen, 2012). Currently, there has been little research carried out to investigate PD models and effective treatments in older adults.

A recent Delphi-study (van Alphen, Videler, Tummers, van Royen, Barendse, Verheul and Rosowsky, 2012) led to the consensus among experts that existing therapies for PD, such as schema therapy, that have been shown to be effective in working aged adults are also applicable to older cohorts. Schema therapy is not the only therapy that could potentially be helpful to use within an older adult population. Within the psychological therapies matrix (Scottish Government) dialectical behaviour therapy is recommended to treat PDs in older adults, however the evidence base is small and from patients with co-morbid depression. According to Abrams and Bromberg (2006) Interpersonal Psychotherapy, Cognitive Behavioural Therapy and Problem solving have not been evaluated well in relation to PD treatment. These therapies also tend to focus on the here and now rather than emphasise the childhood origins of an individual's difficulties which may be particularly important in relation to PDs. Schema therapy integrates elements of cognitive therapy, object relations, attachment, Gestalt, psychoanalytic and constructivist approaches into one unified therapy (Young, Klosko and Weishaar, 2003). It expands on cognitive behavioural

therapy (CBT) by placing greater emphasis on the childhood origins of psychological problems and maladaptive coping styles. It aims to address the core psychological themes that are typical of individuals with PDs (Young *et al.*, 2003).

To begin to investigate the applicability of schema therapy to older adults, the theoretical underpinnings of schema therapy would need to be examined within this group, which was the aim of the current study.

### ***Schema Therapy***

The theoretical underpinning of schema therapy is embedded in attachment theory with its main premise being that chronic and entrenched psychological or personality pathologies develop from unmet core emotional needs in childhood. These unmet needs are hypothesised to lead to the development of early maladaptive schemas (EMS), which comprises emotions, memories, cognitions and bodily sensations in response to which maladaptive behaviours develop. Young (1990) hypothesised that a combination of early life experiences and a child's innate emotional temperament can prevent their core emotional needs being met. Schema theory groups these EMS into "schema domains" which correspond to five broad categories of unmet emotional needs (Young *et al.*, 2003) – see table 1.

Table 1: Unmet core emotional needs and Schema Domains.

<b>Domain</b>	<b>Schema</b>
<b>Disconnection and Rejection</b>  Abusive, traumatic childhoods; unstable family life; rejection and humiliation; feel different and lacking in some way; long periods of insecurity and inconsistent parenting.	Mistrust/Abuse Abandonment/Instability Emotional Deprivation Defectiveness/Shame Social isolation/Alienation

<b>Impairment Autonomy and Performance</b>  Often overprotected and controlled as children, or neglected and ignored, left alone with no interest shown in their lives; continually undermined and made to feel incompetent or encouraged to be dependent on others.	Dependence/Incompetence Vulnerability to Harm Enmeshment Failure
<b>Impaired Limits</b>  Internal sense of control not developed; difficulty respecting the rights of others; family very unboundaried; children did not have rules.	Entitlement Insufficient Self-control/Self discipline
<b>Other Directedness</b>  Experienced conditional love; family overly concerned with appearances; parents focused on their own needs.	Subjugation Self-sacrifice Approval seeking/Recognition seeking
<b>Over-vigilance and Inhibition</b>  Strict parental control to gain compliance; ever watchful – waiting for bad things to happen; frightened of severe punishment for expression of feelings.	Negativity/Pessimism Emotional Inhibition Unrelenting Standards/ Hyper-criticalness Punitiveness

According to Young et al (2003) EMS lie at the core of PDs and the behavioural patterns in the Diagnostic and Statistical Manuals are primarily responses to EMS.

Although EMS are believed to develop initially in childhood they are often reinforced throughout life (Young et al., 2003) through a variety of cognitive, affective and behavioural processes which enables the person to maintain, avoid and adapt to their schemas so that they are not subject to experiencing overwhelming psychological distress (Beckley, 2007). Young et al (2003) theorised that behaviours are not part of the schema itself rather that maladaptive behaviours develop in



response to EMS. One aspect of this may be emotion regulation (ER) and the strategies individuals use to regulate their emotions. For example, individuals may block the emotions connected to a schema. When emotions are blocked the schema does not reach the level of conscious awareness, so the individual cannot take steps to change or heal the schema (Young et al, 2003). The use of dysfunctional ER strategies block, or do not allow, the individual to process emotions (Philips and Power, 2007).

### ***Emotion Regulation***

For the purpose of this study emotion regulation (ER) refers to the processes, both intrinsic and extrinsic, that are responsible for learning to recognise, monitor, evaluate and modify emotional reactions (Thompson, 1994). Both positive and negative emotions are regulated (Gross, 1998) through automatic or controlled, conscious or unconscious, processes that can interject at different points in the emotion generation process (Gross, 1998). ER is thought to be a developmental process which is influenced by temperament, biological and environmental processes. An infant progresses from near complete reliance on caregivers for regulation (for example physical soothing provided when the infant is held) to independent ER.

Through this transition the caregiver plays a vital role. Their use of specific strategies and behaviours become integrated into the infant's repertoire of ER skills across biological and behavioural levels of functioning (Calkins and Johnson, 1998; Calkins and Dedmon, 2000). Therefore, this important transition occurs within the context of

early relationships. It is through the caregiver's ability to read the infant's signals and respond in ways that minimises distress or motivates positive interaction that the infant will then integrate these experiences into their behavioural repertoire (Calkins and Fox, 2002). Therefore, "over time, interactions with parents in emotion laden contexts teach children that the use of particular strategies may be more useful for the reduction of emotional arousal than other strategies" (Sroufe, 1996). However, deviations from supportive care giving may contribute to patterns of ER that undermine the development of appropriate skills and abilities needed for successful ER in later life. This would suggest the quality of the attachments and experiences we have in childhood significantly influence the development of our ability to regulate our emotions as adults. Hence, the lack of adaptive ER skills may contribute to adjustment difficulties characterised by uncontrolled or over controlled emotion expression (Calkin, 1994; Keenan, 2000). It is hypothesised that adverse childhood events or insecure attachments with caregivers can lead to emotion dysregulation (use of more dysfunctional ER strategies), and the development of EMS if the child's core emotional needs are not met.

### ***Expanding Schema Therapy Research***

Schema therapy has grown in popularity and has been applied to individuals with a variety of mental health and interpersonal difficulties. This popularity has led clinicians and academics alike to consider the underlying theoretical assumptions and clinical effectiveness of this model (e.g. Masley, Gillanders, Simpson and Taylor, 2012). A recent review (Masley et al., 2012) concluded that schema therapy demonstrated clinical effectiveness through medium to large effect sizes in a number

of outcome studies. The majority of these studies used a working age adult population and this tends to be where schema therapy is applied. Preliminary research therefore suggests that schema therapy is effective for the treatment of adult patients with PD.

Researchers have highlighted the need to expand the schema therapy knowledge base across a variety of settings and psychopathologies. Older adults encompass a population that have typically been less of a focus among researchers, (Age UK, 2010) and therefore are somewhat neglected in the literature. Many older adults referred to secondary care mental health services have chronic and complex mental health problems. A smaller proportion also presents with PD symptoms (Age Concern, 2007). The availability of psychological therapies for older adults is poor when compared to the adult population, raising the issue of inequality in access to treatment. Research pertaining to the treatment of older adults with more complex mental health problems is also limited. These issues suggest that many older adults may not be receiving optimal psychological treatment.

### ***Hypothesised Model***

EMS are one of the central constructs that underpin the schema therapy model, which develop when an infant's core emotional needs are not met (Young, 2003). Maladaptive behaviours (such as the use of dysfunctional ER strategies) develop in response to the EMS to enable the individual to avoid overwhelming psychological distress related to the schema. Young (2003) theorises that these behaviours are not part of the schema itself but are a response to it. According to Young (2003) EMS lie

at the core of PDs and the behavioural patterns in the DSM-IV are primarily responses to the core schema, for example, emotion dysregulation. Theoretically, it is hypothesised that there would be significant relationships between EMS, the use of dysfunctional ER strategies and PD symptoms. Significant associations between EMS and PD symptoms has been shown in previous studies (Hyer et al, 1987; Schmidt et al, 1995; Petrocelli et al, 2001), although the focus has been on working age adults. Therefore, this study aimed to extend this research by examining this model in an older adult population and investigating the relationships between these three variables (EMS, the use of dysfunctional ER strategies and PD symptoms). The following hypotheses were examined:

***Hypothesis 1:*** Higher YSQ-S3 scores will be associated with higher dysfunctional emotion regulation strategy scores on the REQ-2 and higher PD symptom scores on the SCATI-II.

***Hypothesis 2:*** Higher dysfunctional ER strategy scores on the REQ-2 will be associated with higher PD symptom scores on the SCATI-II.

***Hypothesis 3:*** Higher YSQ-S3 scores and the use of more dysfunctional ER strategy scored on the REQ-2, will predict higher PD symptoms scores on the SCATI-II.

## **Methods**

### ***Study Design***

A cross-sectional quantitative design was used. The researcher administered 3 self-report questionnaires to participants; Young's Schema Questionnaire – Short Form (YSQ-S3),\*\* Coolidge Axis-II Inventory (Short) (SCATI-II)\*\* and The Regulation of Emotions Questionnaire (REQ-2)\*\*.

The YSQ-S3 (Young, 2014) is a 90 item self-report measure. Participants rated themselves on how well each item described them on a 6-point Likert scale. Studies of the YSQ-S3 (Welburn, Coristine, Dagg, Pontefract and Jordan, 2002; Oei and Baranoff, 2007) indicated that the reliability and factor structures were equivalent for both the short and long YSQ forms. The internal consistency for the short form has been examined across cultures and languages producing a range of Cronbach's  $\alpha$  values between 0.63 – 0.98 (Baranoff, Oei, Cho and Kwon, 2006; Trip, 2006; Kriston, Schafer, Jacob, Harter and Holzel, 2013; Lyrakos, 2014). For example, Baranoff et al (2006) reported a Cronbach's  $\alpha$  of 0.96. For the present research the Cronbach's  $\alpha$  was 0.91. The YSQ has also been shown to be a reliable measure of EMS across the life span (Pauwels, Claes, Dierckx, Debast, van Alphen, Rossi, Schotte, Santens and Peuskens, 2014).

The SCATI-II (Coolidge, personal correspondence) is a 70 item self-report inventory that assesses personality disorder symptoms. Items were answered on a 4-point Likert scale. It has been used in over 100 research publications and has demonstrated sufficient reliability ( $\alpha = 0.66$ ) and validity ( $r = 0.77$ ) within an older adult

population (Coolidge, Segal, Cahill and Simerson, 2010). It has good convergent validity and can be used to assess the presence of PDs (Coolidge et al, 2010). In the present study the Cronbach's  $\alpha$  was 0.89.

The REQ-2 (Power, personal correspondence) is a 21 item self-report instrument that measures both, internal and external, functional and dysfunctional ER strategies, creating 4 subscales. A Cronbach's alpha of 0.66-0.76 was found by the original authors (Philips and Power, 2007) for the subscales, which is an acceptable level of internal consistency. They also provided support for the validity of the REQ-2 ( $r = 0.18 - 0.59$  for subscales). In the present study the Cronbach's  $\alpha$  ranged from 0.35 – 0.66. Short forms were used to improve compliance and accuracy of completion as well as reduce fatigue. Socio-demographic variables (gender, age, and psychiatric diagnoses) were also collected.

### ***Participants***

Sixty-two participants were recruited from seven older adult (65+ years) community mental health teams across Aberdeen and Aberdeenshire, in line with the inclusion/exclusion criteria presented in Table 2:

Table 2: Participant Recruit Inclusion/Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Male and female patients who meet the criteria for accessing services from the Older Adult Community Mental Health Teams	Patients who are actively psychotic
	Patients who are actively manic
Inpatients, out patients and patients who attend the day hospital	Patients with a diagnosis of dementia
Able to give informed consent	Patients with a diagnosis of a learning disability
	Patients where their substance misuse would create difficulties with engagement with researcher (as determined by their named professional)
	Patients whose first language was not English

Written informed consent was obtained at the beginning of each appointment from all participants. The research procedures were previously reviewed and authorised by the National Research Ethics Service Committees – North of Scotland (appendix 2).

## Statistical Analysis

### *Power Calculation*

The researcher determined that the number of participants required was 67; based on a power level of 0.8 at a significance level of 0.05 for a medium effect size ( $r=0.3$ ) in a multiple regression analysis with 2 predictor variables (Cohen, 1992). A sample size of 62 was obtained which provided sufficient power to detect slightly larger effects, as discussed and agreed with a statistician (Cohen, 1992).

### ***Statistical Analysis of Results***

Multiple regression analysis, using the forced-entry (Enter) method, was used to examine the relationships between the three variables identified (EMS, PD symptoms and ER strategies). This method was chosen due to there being prior research and good theoretical reasoning for including the chosen predictor variables, however, there was no assumption made about the order in which these variables would be entered into the model (Field, 2005). For the purposes of this analysis the dysfunctional ER scores (internal and external) were combined. Some have argued (Philips and Power, 2007) that this over simplifies the ER model however, the study aimed to analyse the simplest relationships as a basis for future research within this population. Furthermore, as the internal and external dysfunctional subscales are likely to be highly correlated there is a risk that using the individual subscales will mean that one subscale may not make a statistically significant contribution to the model, meaning it would be a redundant variable that would not be contributing to the model (Refer to **\*\*footnote\*\*** on page 80)



## Results

Preceding statistical analyses, the data was examined and explored for normal distribution using SPSS. Calculations and plots showed no significant skewness, with all data being normally distributed within the sample.

### *Descriptive statistics*

62 participants (38 female and 24 male) completed all questionnaires. Participants were aged 65-86 years old, with a mean age of 70.89 years. The most common self-reported diagnosis was depression (28 participants), followed by anxiety (8), anxiety and depression (8), not known (8), other diagnoses (6) and bipolar (4).

35 participants were recruited from Aberdeen City CMHT and 27 from Aberdeenshire CMHT.

Table 3: Descriptive statistics for each variable.

	<b>Range of scores within sample</b>	<b>Mean</b>	<b>Standard Deviation</b>
YSQ-S3	113 – 393	235.90	66.55
SCAT-II**	77 – 195	121.50	24.92
Internal Dysfunctional REQ	5 – 21	10.92	3.22
External Dysfunctional REQ	5 – 13	14.71	3.18
Internal Functional REQ	5 – 20	5.97	1.43
External Functional REQ	7 – 26	18.13	3.80

### *Young's Schema Questionnaire*

The YSQ-S3 score was calculated for each of the 18 schemas and a total score, which is the method that has been used in previous research (Trip, 2006; Stanojevic and Nedeljkovic, 2012; Fereidouni et al, 2014). Higher scores on the YSQ were

indicative of greater presence of maladaptive schemas (Dutra, Callahan, Forman, Mendelsohn and Herman, 2008). Therefore, these scores were used in the analysis of the data to allow the researcher to answer the hypotheses posed. The number of clinically relevant schemas for each participant was also calculated by counting the number of schemas that were scored 5 or 6 on two or more items of a particular schema. These scores were then totalled across the sample for each schema.

Table 4: Schemas found within the population

<b>Early Maladaptive Schemas</b>	<b>Total Score for Whole Sample (N=62)</b>	<b>Number of participants with clinically significant schema (N= 62)</b>
Self-Sacrifice	1159	36
Unrelenting Standards	1112	39
Insufficient Self-Control/Self Discipline	939	25
Pessimism/Worry	898	23
Self-Punitiveness	898	27
Emotional Inhibition	879	23
Admiration/Recognition Seeking	848	18
Social Isolation/Alienation	779	19
Abandonment	748	15
Entitlement/Superiority	743	14
Vulnerability to Harm/Illness	735	15
Practical Incompetence/Dependence	734	20
Failure to Achieve	734	12
Subjugation	713	10
Emotional Deprivation	711	19
Mistrust	690	9
Defectiveness/Unlovability	628	9
Enmeshment	572	7

When looking at the sample as a whole the total scores for each schema range from 572 to 1159, with higher scores being indicative of greater presence of that schema within the sample. The most prevalent schema was the self-sacrifice schema, with the least prevalent being the enmeshment schema (see table 4), when looking at total score. The most prevalent clinically significant schema was unrelenting standards. The number of clinically significant schemas for each participant ranged from 0 to 17 with the average number of clinically significant schemas being 5.47 (SD=4.45).

### ***Regulation of Emotions Questionnaire***

The scores were calculated for each subscale (internal dysfunctional, external dysfunctional, internal functional and internal functional) with higher scores indicating greater use of each strategy. In previous research the total mean score for each subscale was used (Philips and Power, 2007; Livingstone, Harper and Gillanders, 2009) which was also used within this study.

### ***Short Coolidge Axis-II Inventory***

The SCATI-II total score was calculated for each individual with higher scores being indicative of greater presence of personality disorder symptoms. The developer of the measure (Coolidge, personal communication) advised that the total score would be the most meaningful outcome measure to use in relation to the hypotheses proposed. The individual PD scores were not chosen to reduce the likelihood of type 1 errors when completing multiple correlations.

### *Correlation Analysis*

All assumptions were met for the use of parametric statistics. Pearson's correlation was used to answer the first two hypotheses. For the correlational analysis a conservative p-value of .01 was chosen in order to manage the type 1 error rate related to multiple reported correlations, the Bonferroni method, (Field, 2005).

Table 5: Correlation Matrix of the relationship between the three variables.

	Pearson's Correlation with YSQ-S3 scores	Person's Correlation with SCATI-II scores
YSQ-S3	-	.780**
Internal dysfunctional REQ-2	.530**	.640**
External dysfunctional REQ-2	.260*	.349**
Internal Functional REQ-2	-.136	-.135
External Functional REQ-2	-.342**	-.205

\*Correlation is significant at the 0.05 level (1-tailed)

\*\*Correlation is significant at the 0.01 level (1-tailed)

As hypothesised, both dysfunctional strategy subscales were positively correlated with YSQ-S3 scores, although, internal dysfunctional strategies were more highly correlated. External functional strategies were significantly negatively correlated with YSQ-S3 score. The relationship between YSQ-S3 scores and SCATI-II scores revealed a significant positive correlation between these scores. Correspondingly, this means that as the presence of EMS increased, the presence of PD symptoms also increased.

Significant relationships were also found between the use of dysfunctional emotional regulation strategies and scores on the SCATI-II; with the use of more dysfunctional

emotion regulation strategies being associated with the presence of more PD symptoms. There was no significant relationship between functional emotion regulation strategies and the presence of PD symptoms.

### ***Multiple Regression***

Tests to see if the data met the assumption of co-linearity indicated that multi-co-linearity was not a concern (YSQ score: Tolerance = .85, VIF = 1.18; REQ score: Tolerance = .85, VIF = 1.18). The histogram of standardised residuals indicated that the data contained approximately normally distributed errors, as did the P-P plots of standardised residuals, which were close to or on the line of best fit. The scatterplot of standardised residuals showed that the data met the assumption of homogeneity of variance and linearity. An analysis of standardised residuals was carried out on the data to identify any outliers, of which there were none (Mahal. Distance = 10.46 below critical value of 13.82). The data also met the assumption of non-zero variance (YSQ score, variance = 4428.71; REQ score, variance = 0.10; SCATI-II score, variance = 620.88).

Using the enter method it was found that YSQ-S3 scores and dysfunctional ER strategies scores explained a significant amount of variance in SCATI-II scores ( $F(2,59) = 66.36, p < 0.01, R^2 = 0.692, R^2_{\text{adjusted}} = 0.682$ ).

Table 6: Part Correlation Co-efficient for predictor variables.

	Part Correlations	% variance predicted in SCATI-II score by predictor variable
YSQ-S3	0.603	36.36%
Dysfunctional strategies REQ	0.290	8.41%

\*\* see footnote at bottom of page for REQ-2 subscales used as separate predictor variables

The YSQ-S3 scores ( $\beta = 0.66$ ,  $t(61) = 8.35$ ,  $p < 0.01$ ) and the dysfunctional ER strategies scores ( $\beta = 0.32$ ,  $t(61) = 4.02$ ,  $p < 0.01$ ) both significantly predicted SCATI-II scores. Overall, YSQ-S3 scores and dysfunctional ER strategies scores predicted approximately 69% of the variance in SCATI-II score. YSQ-S3 made the largest unique contribution, 36.36%, (see table 6), however, the dysfunctional strategies REQ score also made a statistically significant contribution, 8.41%.

**\*\*Footnote:** When the multiple regression was run with both REQ-2 dysfunctional subscales as predictor variables it was found that due to the subscales being highly correlated the external dysfunctional subscale, ( $\beta = 0.110$ ,  $t(60) = 1.433$ ,  $p > 0.01$ ), did not make a statistically significant contribution to the model in the presence of the internal dysfunctional subscale. Therefore the decision was made to combine the scales so that there was not a redundant predictor variable within the model\*\*

## **Discussion**

The primary aim of this study was to explore the relationships between early maladaptive schemas, emotion regulation strategies and personality disorder symptoms in an older adult population. To the author's knowledge, the research is the first of its kind to find support for the relationship between EMS, PD symptoms and the use of dysfunctional ER strategies, consistent with the schema therapy model, within an older adult population. Significant relationships were found between all three variables, with the presence of EMS and the use of dysfunctional ER strategies predicting approximately 69% of the variance in PD symptoms. The YSQ-S3 made the largest unique contribution, (36.36%) however, the dysfunctional strategies REQ score also made a statistically significant contribution (8.41%).

It is difficult for the author to reflect on the descriptive data (Table 3) from the YSQ-S3 results as the author is not aware of any current UK population norms to compare this data against. The Romanian Version of the YSQ-S3 has published norms for individual schemas (Trip, 2006), however, the details of the YSQ-S3 don't appear to match the YSQ-S3 used in this study, with Trip (2006) stating that the Romanian YSQ-S3 has 114 items; conversely the English version has 90 items. Therefore it did not seem valid to compare the results. Research using previous versions of the YSQ short form suggested that a YSQ-S2 group mean score higher than 180 was indicative of a clinical population (Mauchand, 2011). The results of this study using a clinical population would be in line with this finding.

With regard to the SCATI-II, many other studies using this measure have used it for the purpose of screening for specific PDs and therefore do not tend to report the mean total score for the participants. Therefore, the author has included an appendix comparing the individual PD mean scores with population norms (please refer to appendix 3). These results show that generally the mean PD results found within this study were in keeping with the population norms.

When comparing the sample on the REQ-2 scores with the wider population it appears that compared to previous studies using adolescent samples (Amin, 2011), the current sample scored lower on the use of internal functional and internal dysfunctional scores, as well as higher on external dysfunctional and external functional scores. It is interesting that an older adult population appears to use relatively more external and less internal ER strategies when compared to a younger population. Perhaps this reflects differences in ER strategies used throughout life or a difference in resources and ability as we age. Compared to a non-clinical sample (Nesbitt, 2010) the current sample mean scores were all higher.

If an infant's core emotional needs are not met we would expect that the individual would develop EMS (Young, 2003) but that they may also develop dysfunctional ER strategies. ER strategies are behaviours which Young (2003) theorises are not part of the schema itself but rather that they are maladaptive behaviours which develop in response to EMS. For example, individuals may block the emotions connected to a schema. When emotions are blocked the schema does not reach the level of



conscious awareness, so the individual cannot take steps to change or heal the schema (Young, 2003). The use of dysfunctional ER strategies has the effect of blocking or not allowing the individual to process emotions and prevents the individual developing tolerance of emotions (Philips and Power, 2007). The results from this study show that these variables are closely related, however, further experimental research would need to be conducted to examine causality and provide support for Young's theory: in response to EMS individuals develop maladaptive coping styles, e.g. dysfunctional ER strategies, which ultimately maintain the presence of EMS. Young's theory may also explain that the use of external functional ER strategies reduces as the presence of EMS increases. Functional ER strategies use emotional information in a useful and helpful way that involves holding and processing emotional information (Philips and Power, 2007). If there is a greater presence of EMS the individual may not be able to engage in these processes without being overwhelmed by psychological distress or may not have learned how to engage in processing emotions in a helpful way. Nevertheless, future research would have to be completed to investigate this further.

As the presence of EMS increased the number of PD symptoms also increased. Significant associations between EMS and personality symptoms have been shown in several previous studies (Hyler et al, 1987; Schmidt et al, 1995; Petrocelli et al, 2001) and this study adds to those findings. It also extends those findings to an older adult population and shows that these variables are present within this sample.

According to Young (2003) EMS lie at the core of PD and the behavioural patterns in DSM-IV are primarily responses to the core schemas, an example of which may be emotion dysregulation. The above results provide support for the hypothesis that when more dysfunctional ER strategies were present more PD symptoms were also found to be present. Most of the previous research in this area is related to Borderline Personality Disorder (BPD) with individuals tending to use dysfunctional ER strategies (Carpenter, Tomko, Trull, and Boomsma, 2013). However, the use of dysfunctional ER strategies are also a core characteristic of many PDs and mental health difficulties (Royal College of Psychiatrist, 2015) which the results of this study supports.

Finally, the greater the presence of EMS and more frequent use of dysfunctional ER strategies, the more likely it is that the individual will display PD symptoms. PDs can significantly and adversely affect how an individual functions in many aspects of life (APA, 2013), and many older adults referred to secondary care mental health services have severe and enduring mental health problems, with a proportion also presenting with PD symptoms (Age Concern, 2007). The availability of psychological therapies for older adults with PDs is poor.

The results of this study provide support for the theoretical underpinnings of schema therapy within an older adult population, however, the results are limited by the use of cross sectional observational data. Therefore, it would be beneficial to try to replicate this study across and within samples of older adults to gather more

prospective data. The results, however, build a theoretical foundation on which to explore these findings further, for example, investigating which EMS and ER strategies are most relevant to predicting PD symptom scores. Subsequent investigation would enable a more detailed understanding of this model within this group with a hope for future research being the development of experimental studies of the therapy this model underpins; to investigate whether schema therapy would be effective in this population. It is hoped that this study has shown the need for further investigation into the use of schema therapy for older adults, as theoretically the schema model would fit with the results from this study.

### ***Strengths and Limitations***

Strengths of the study include the relatively large sample size which allowed sufficient statistical power to complete multiple regression (as discussed and agreed with a statistician). The study was also naturalistic in its decision to explore these variables using a transdiagnostic approach, although, this may impact on the generalisability of the results as the majority of participants self-reported depression as their primary diagnosis. The sample chosen to take part in the study was selected from a Tier 3 service which provides support for individuals with a range of mental health difficulties, making the results particularly clinically relevant. Self-report measures were used to measure all variables within the study. There is extensive literature (McDonald, 2008) on the reliability of self-report measures which suggests that self-reporting may not be as accurate as objective measurement (i.e. participants may not answer questions truthfully), however, it would be difficult to assess these

variables in another way and all measures used demonstrated good validity. Bias may have been introduced by way of selection method, from treatment seeking patients and patients engaged in treatment, however, in reality it is representative of the patient who access the service from which the sample was recruited.

A final point to consider is the use of other statistical methods for examining the variables within this project. As stated earlier the YSQ-S3 scores made the largest unique contribution to the variance in SCATI-II scores, with the REQ-2 scores also making a significant independent contribution. The priori analysis plan was to conduct a multiple regression because the variables examined in this project had not been explored within this population before. Therefore, the author felt that the most basic relationships, between all 3 variables, should be examined first as the foundation for future research. This plan was adhered to and the results are useful as they show that there are relationships between these variables within this population. Future studies, however, may benefit from performing mediation or moderation analysis as this would enhance a deeper and more refined understanding of the relationships between these variables within this population. Typically, mediation mechanisms are proposed when a body of literature has documented causal relationships. Again due to the design of this project and the use of cross sectional data causal relationships could not be determined. Consequently, for future research, it may be worth imploring mediation/moderation analysis using experimental designs.

## ***Conclusion***

In conclusion, this research is the first of its kind to find support for the relationships between EMS, PD symptoms and the use of dysfunctional ER strategies, consistent with the schema therapy model, within an older adult population and it is hoped that future research will explore and build upon these findings.

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## Appendix 1: Author Guidelines for the Journal of Mental Health and Aging

### Aging and Mental Health

#### Manuscript preparation

##### 1. General guidelines

- Manuscripts are accepted only in English. Any consistent spelling and punctuation styles may be used. Please use single quotation marks, except where ‘a quotation is “within” a quotation’. Long quotations of 40 words or more should be indented without quotation marks.
- Manuscripts may be in the form of (i) regular articles not usually exceeding **5,000 words** (under special circumstances, the Editors will consider articles up to 10,000 words), or (ii) short reports not exceeding **2,000 words**. These word limits **exclude** references and tables. Manuscripts that greatly exceed this will be critically reviewed with respect to length. Authors should include a word count with their manuscript.
- Manuscripts should be compiled in the following order: title page (including Acknowledgments as well as Funding and grant-awarding bodies); abstract; keywords; main text; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list). Please supply all details required by any funding and grant-awarding bodies as an Acknowledgement on the title page of the manuscript, in a separate Funding paragraph, as follows:  
*For single agency grants:*  
This work was supported by the <Funding Agency> under Grant <number xxxx>.  
*For multiple agency grants:*  
This work was supported by the <Funding Agency #1> under Grant <number xxxx>; <Funding Agency #2> under Grant <number xxxx>; and <Funding Agency #3> under Grant <number xxxx>.
- Structured [Abstracts](#) of not more than 250 words are required for all manuscripts submitted. The abstract should be arranged as follows: Title of manuscript; name of journal; abstract text containing the following headings: Objectives, Method, Results, and Conclusion.
- Each manuscript should have 3 to 5 [keywords](#).
- Search engine optimization (SEO) is a means of making your article more visible to anyone who might be looking for it. Please consult our guidance [here](#).
- Section headings should be concise. The text should normally be divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content.
- All authors of a manuscript should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the manuscript. One author should be identified as the corresponding author.

Please give the affiliation where the research was conducted. If any of the named co-authors moves affiliation during the peer review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after the manuscript is accepted. Please note that the email address of the corresponding author will normally be displayed in the article PDF (depending on the journal style) and the online article.

- All persons who have a reasonable claim to authorship must be named in the manuscript as co-authors; the corresponding author must be authorized by all co-authors to act as an agent on their behalf in all matters pertaining to publication of the manuscript, and the order of names should be agreed by all authors.
- Biographical notes on contributors are not required for this journal.
- Authors must also incorporate a [Disclosure Statement](#) which will acknowledge any financial interest or benefit they have arising from the direct applications of their research.
- For all manuscripts non-discriminatory language is mandatory. Sexist or racist terms must not be used.
- Authors must adhere to [SI units](#). Units are not italicised.
- When using a word which is or is asserted to be a proprietary term or trade mark, authors must use the symbol ® or TM.
- Authors must not embed equations or image files within their manuscript.

Advice to authors on preparing a manuscript

NB: Please follow any specific instructions for authors provided by the Editor of the journal

Font: Times New Roman, 12 point. Use margins of at least 2.5 cm (1 inch). Further details of how to insert special characters, accents and diacritics are available [here](#).

Title: Use bold for your article title, with an initial capital letter for any proper nouns.

Authors' names: Give the names of all contributing authors on the title page exactly as you wish them to appear in the published article.

Affiliations: List the affiliation of each author (department, university, city, country).

Correspondence details: Please provide an institutional email address for the corresponding author. Full postal details are also needed by the publisher, but will not necessarily be published.

Anonymity for peer review: Ensure your identity and that of your co-authors is not revealed in the text of your article or in your manuscript files when submitting the manuscript for review. Advice on anonymizing your manuscript is available [here](#).

Abstract: Indicate the abstract paragraph with a heading or by reducing the font size. Advice on writing abstracts is available [here](#).

**Keywords:** Please provide five or six keywords to help readers find your article. Advice on selecting suitable keywords is available [here](#).

**Headings:** Please indicate the level of the section headings in your article:

□ First-level headings (e.g. Introduction, Conclusion) should be in bold, with an initial capital letter for any proper nouns. □ Second-level headings should be in bold italics, with an initial capital letter for any proper nouns. □ Third-level headings should be in italics, with an initial capital letter for any proper nouns. □ Fourth-level headings should also be in italics, at

the beginning of a paragraph. The text follows immediately after a full stop (full point) or other punctuation mark.

**Tables and figures:** Indicate in the text where the tables and figures should appear, for example by inserting [Table 1 near here]. The actual tables and figures should be supplied either at the end of the text or in a separate file as requested by the Editor. Ensure you have permission to use any figures you are reproducing from another source. Advice on artwork is available [here](#). Advice on tables is available [here](#).

Running heads and received dates are not required when submitting a manuscript for review.

If your article is accepted for publication, it will be copy-edited and typeset in the correct style for the journal.

If you have any queries, please contact us at [authorqueries@tandf.co.uk](mailto:authorqueries@tandf.co.uk), mentioning the full title of the journal you are interested in, or see our Author Services homepage.

**In the text Placement** References are cited in the text by the author's surname, the publication date of the work cited, and a page number if necessary. Full details are given in the reference list. Place them at the appropriate point in the text. If they appear within parenthetical material, put the year within commas: (see Table 3 of National Institute of Mental Health, 2012, for more details) Within the same parentheses Order alphabetically and then by year for repeated authors, with in-press citations last.

Separate references by different authors with a semi-colon.

Repeat mentions in the same paragraph

If name and year are in parentheses, include the year in subsequent citations.

## Appendix 2: Ethical and R&D Approval Letters

### NRES Committees - North of Scotland

Summerfield House  
2 Eday Road  
Aberdeen  
AB15 6RE

Telephone: 01224 558474  
Facsimile: 01224 558609  
Email: nosres@nhs.net



28 March 2014

Miss Shonagh Reid  
Trainee Clinical Psychologist  
NHS Grampian  
Clinical Psychology Department  
Older Adult Service  
Block D  
Royal Cornhill Hospital  
ABERDEEN  
AB25 2ZH

Dear Miss Reid

**Study title:** Schema Therapy for Older Adults: An Investigation into the relationships between early maladaptive schemas, personality traits and emotion regulation strategies.

**REC reference:** 14/NS/0049

**IRAS project ID:** 138914

The Research Ethics Committee reviewed the above application at the meeting held on 27 March 2014.

Thank you for attending the meeting and clarifying the following points:

- The Committee asked how the participants would be approached. You replied that the potential participants would be provided with information by their Mental Health Team; if they were interested they would give permission to the Mental Health Team to pass on their contact details to the researcher. The Committee felt that it would be more appropriate if the potential participants contacted the researcher directly allowing the participants to 'opt-in' to the study. You agreed to this.
- The Committee asked for further information on how the number of participants required for the study was reached. The researcher replied that 67 was quite a large number but recruitment would be across 7 teams and it should be feasible within the time frame. The Committee asked if advice had been sought from a statistician as the numbers may be higher than required. You informed the Committee that statistical analysis had taken place but not from a statistician.
- The Committee felt that it was not necessary to contact the GP. You agreed to this.

- The Committee asked what precautions were in place if interviews were going to take place in the participant's home. You replied that you would meet with the mental health worker to carry out a risk assessment. The Committee asked what if participants got distressed at their own homes. You replied that as part of ongoing training, home visits were part of this.
- The Committee asked how long the interviews would take. You replied that they would take 90 minutes.
- The Committee asked what form the debrief would take. You replied that at the end of the session, they would run through the Debrief Sheet. If after the debrief there were issues, you would assist them or suggest that they contact their mental health practitioner.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the REC Manager Dr Rachel Venables, [nosres@nhs.net](mailto:nosres@nhs.net).

#### **Ethical opinion**

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

#### **Ethical review of research sites**

##### **NHS Sites**

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

#### **Conditions of the favourable opinion**

The favourable opinion is subject to the following conditions being met prior to the start of the study.

#### **Additional Conditions to be Met**

- 1 The Committee felt it would be helpful if you sought the advice of a Statistician regarding the sample size.
- 2 The Committee ask that a Letter of Invitation be included with the contact details of the researcher to allow the participant to 'opt-in' to the study.

##### **Participant Information Sheet**

- 3 Under the heading 'What do I do next?', please inform the participant that they should contact you directly.

- 4 Under the heading 'Who has reviewed the study?' please change 'North East of Scotland Research Ethics Committee' to 'NRES Committees - North of Scotland' and 'Grampian' with 'North of Scotland'.

#### Consent Form

- 5 Please insert the following point '*I understand that data collected during the study, may be looked at by individuals from [company name], from regulatory authorities or from the NHS Trust/Health Board, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.*'

**You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.**

**Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.**

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

#### Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett ([catherineblewett@nhs.net](mailto:catherineblewett@nhs.net)), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

**It is responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).**



### Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Covering Letter - Email		12 March 2014
Investigator CV: Shonagh Reid		12 March 2014
Supervisor's CV: Amber Keenan		1 November 2013
Supervisor's CV: Angus Lorimer		31 October 2013
Supervisor's CV: Paul Hutton		29 November 2013
GP Letter	1	22 November 2013
Participant Consent Form	1	15 October 2013
Participant Information Sheet	1	15 October 2013
Participant Information Sheet: Debrief Sheet	1	15 October 2013
Protocol	1	12 November 2013
Questionnaire: The Short-Form of the Coolidge Axis II Inventory (SCATI)		12 March 2014
Questionnaire: Short Coolidge Axia II Inventory: Self Report Form (SCATI)		12 March 2014*
Questionnaire: Regulation of Emotion Questionnaire 2		12 March 2014*
Questionnaire: YSQ-S2		12 March 2014*
REC application	138914/5784 42/1/888	13 March 2014
Referees or other scientific critique report		30 July 2013

\*date received

### Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

### After ethical review

#### Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review.

<b>14/NS/0049</b>	<b>Please quote this number on all correspondence</b>
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We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

With the Committee's best wishes for the success of this project.

Yours sincerely



**Professor Helen Galley**  
**Chair**

Enclosures: List of names and professions of members who were present at the meeting  
and those who submitted written comments  
After ethical review – guidance for researchers

Copy to: Professor Charlotte Clarke, University of Edinburgh  
NHS Grampian R&D Department

**NRES Committees - North of Scotland**  
Summerfield House  
2 Eday Road  
Aberdeen  
AB15 6RE

Telephone: 01224 558458  
Facsimile: 01224 558609  
Email: nosres@nhs.net



2 May 2014

Miss Shonagh Reid  
Trainee Clinical Psychologist  
NHS Grampian  
Clinical Psychology Department  
Older Adult Service  
Block D  
Royal Cornhill Hospital  
Aberdeen  
AB25 2ZH

Dear Miss Reid

**Study title:** Schema Therapy for Older Adults: An investigation into the relationships between early maladaptive schemas, personality traits and emotion regulation strategies.  
**REC reference:** 14/NS/0049  
**IRAS project ID:** 138914

Thank you for your letter of 1 May 2014. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 28 March 2014.

#### Documents received

The documents received were as follows:

Document	Version	Date
Covering Letter		1 May 2014
Letter of Interest	1	22 April 2014
Participant Consent Form	2	4 April 2014
Participant Information Sheet	2	4 April 2014

#### Approved documents

The final list of approved documentation for the study is therefore as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Covering Email		12 March 2014
Covering Letter		1 May 2014
Investigator CV: Shonagh Reid		12 March 2014
Supervisor's CV: Amber Keenan		1 November 2013
Supervisor's CV: Angus Lorimer		31 October 2013
Supervisor's CV: Paul Hutton		29 November 2013
Other: GP Letter	1	22 November 2013
Other: Letter of Interest	1	22 April 2014
Participant Consent Form	2	4 April 2014
Participant Information Sheet: Debrief Sheet	1	15 October 2013
Participant Information Sheet	2	4 April 2014
Protocol	1	12 November 2013
Questionnaire: The Short-Form of the Coolidge Axis II Inventory (SCATI)		12 March 2014*
Questionnaire: Short Coolidge Axia II Inventory: Self Report Form (SCATI)		12 March 2014*
Questionnaire: Regulation of Emotion Questionnaire 2		12 March 2014*
Questionnaire: YSQ-S2		12 March 2014*
REC application	138914/578 442/1/888	13 March 2014
Referees or other scientific critique report		30 July 2013

\* date received

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

<b>14/NS/0049</b>	<b>Please quote this number on all correspondence</b>
-------------------	---

Yours sincerely

*Carol Irvine*

**Mrs Carol Irvine**  
**Ethics Co-ordinator**

Copy to: Professor Charlotte Clarke, University of Edinburgh  
NHSG R&D Department

**Research and Development** Foresterhill House Annexe  
Foresterhill  
ABERDEEN  
AB25 2ZB



Shonagh Reid  
NHS Grampian  
Clinical Psychology Department  
Block D,  
Old Age Psychiatry Directorate  
Royal Cornhill Hospital  
Aberdeen

Date 06/05/2014  
Project No 2014MH005  
Enquiries to Lynn Massie  
Extension 53846  
Direct Line 01224 553846  
Email grampian.randdpermissions@nhs.net

Dear Shonagh

**Management Permission for Non-Commercial Research**

**STUDY TITLE:** Schema Therapy for Older Adults: An investigation into the relationships between early maladaptive schemas, personality traits and emotion regulation strategies.  
**PROTOCOL NO:** V1: 12 November 2013  
**REC REF:** 14/NS/0049

Thank you very much for sending all relevant documentation. I am pleased to confirm that the project is now registered with the NHS Grampian Research & Development Office. The project now has R & D Management Permission to proceed locally. This is based on the documents received from yourself and the relevant Approvals being in place.

All research with an NHS element is subject to the Research Governance Framework for Health and Community Care (2006, 2<sup>nd</sup> edition), and as Chief or Principal Investigator you should be fully committed to your responsibilities associated with this.

**It is particularly important that you inform us when the study terminates.**

The R&D Office must be notified immediately and any relevant documents forwarded to us if any of the following occur:

- A change of Principal Investigator, Chief Investigator or any additional research personnel
- Premature project termination
- Any amendments – substantial or non-substantial (particularly a study extension)
- Any change to funding or any additional funding

We hope the project goes well, and if you need any help or advice relating to your R&D Management Permission, please do not hesitate to contact the office.

Yours sincerely

A handwritten signature in black ink, appearing to be 'S. Ridge', written over a horizontal line.

**Susan Ridge**  
**Non-Commercial Manager**

**Sponsor:** University of Edinburgh

NHSG-RD-DOC-019 – V3.1 – R&D Management Permission Letter (Non CTIMP)

### Appendix 3: Current study and Norms for SCATI-II Comparison

	Mean (current study)	Mean (Watson and Sinha, 2007)	Mean (Coolidge et al, 2010)	Standard Deviation (SD) (current study)	SD (Watson and Sinha, 2007)	SD (Coolidge et al, 2010)
Antisocial PD	7.23	8.79	8.23	2.11	2.83	2.58
Avoidant PD	9.69	10.54	9.24	3.56	3.02	2.83
Borderline PD	7.92	10.89	8.59	3.56	2.93	2.79
Dependent PD	8.61	11.94	7.87	2.70	2.72	2.36
Depressive PD	11.66	-	9.41	3.23	-	2.92
Histrionic PD	8.31	13.78	10.30	2.62	2.86	2.77
Narcissistic PD	7.26	11.29	10.49	2.38	2.17	2.66
Obsessive-compulsive PD	10.44	13.83	10.85	3.21	3.02	2.72
Paranoid PD	8.81	11.28	9.46	3.40	2.83	2.87
Passive Aggressive PD	8.21	10.99	9.41	2.88	2.45	2.58
Sadistic PD	6.05	9.25	6.78	1.44	2.84	2.05
Self-Defeating PD	8.58	9.15	8.49	2.66	2.41	2.42
Schizotypal PD	8.26	9.65	8.59	2.79	2.53	2.78
Schizoid PD	10.48	7.56	7.52	3.18	2.41	2.41

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